EnConTea

A Quarterly Newsletter of the Project -
Energy Conservation in Small Sector Tea Processing Units in South India

Issue - 7 December 2009

PROJECT IN BRIEF

The project - Energy Conservation in Small Sector Tea Processing Units in south India, has been initiated by the Tea Board to remove barriers to energy conservation and energy efficiency that inhibit the realization of large energy saving potential in the tea sector. This 4-year project is supported by the United Nations Development Programme - Global Environment Facility. The project's objective is to remove barriers and to develop replicable strategies for energy efficiency and energy conservation interventions in the tea processing industry in south India. The objective would be achieved by:

a. Awareness creation among the target sector about energy efficiency/renewable energy technologies and their relation to profitability

b. Elimination of financial barriers that inhibit investment in energy conservation equipment

c. Adoption and procurement of energy efficiency/renewable energy equipment /practice

d. Learning, knowledge sharing and replication

INSIDE

EDITORIAL

Mr. R.D. Nazeem, I.A.S.,
Executive Director, Tea Board
National Project Director of the Project

This issue of the newsletter is largely about energy audits. For the skeptics, and I know their number is rapidly dwindling, we present to you a step by step energy audit process in an attempt to demystify the same. We have already completed more than 50 detailed energy audits in tea factories and I urge you to register for the same by contacting the project office in the Tea Board premises in Coonoor at the earliest, as the financial assistance for the same from the project is limited to 100 energy audits. We also present an analysis of the results of the 50 energy audits conducted. This has brought out some similarities and differences with regard to how bought leaf factories and estate factories use energy. It gives us valuable inputs about the key equipment that would make a difference to energy cost and consumption reduction. I am also happy to learn that the selective and strategic implementation of energy audit recommendations is taking place in many factories. I request you to inform the project implementation team of the energy conservation measures that you have adopted in the past couple of years, as this information would help us in preparing for a mid term review of the project in the coming months.

I am also pleased to share with you that we have recently started to monitor thermal energy efficiency initiatives adopted by tea factories. We are slowly but surely arriving at a strategy for significant reduction in fuel consumption and cost. This would involve higher levels of investment either in briquette making units, water heaters instead of air heaters, fuel storage yards, etc. We realize that the investment required for thermal energy conservation is higher and so is the associated technology and financial risk. The project has engaged a finance consultant who would look at these risks for different stakeholders and suggest to us a way forward.

We have engaged with the Ministry of New and Renewable Energy (MNRE) to stimulate power generation through small hydro for tea estates and an easy scheme has been launched by the MNRE. Some details of this scheme are highlighted in this edition of EnConTea. Our project also supported the Tea & Tourism Carnival in Ooty that had about 3000 visitors. Through this initiative we were able to spread the message of energy conservation and climate change not only to tea factories but also to students and the larger community in the Nilgiris.

I am glad that Dr. Sethumadhavan, Professor School of Energy Studies, Anna University, has accepted our invitation to actively associate himself with our project. He is now available full time to the tea sector for a limited period of six months. I urge you to take advantage of this opportunity and ensure that his presence makes a difference to your energy consumption.

I am happy that the circulation of the newsletter has doubled and we now print 1000 copies instead of 500. From this issue onwards we would be regularly mailing EnConTea to factories in north eastern regions as well. We also have adequate stock of back issues for our new readers, should they require it. Your feedback, especially on what is interesting to read and what is not, would be appreciated.

(For Internal Circulation Only)

VIEW POINT

INTERVIEW WITH DR. R. SETHUMADHAVAN

Institute for Energy Studies, Anna University (Chennai)

1. In your opinion, what is the scope of energy conservation in the tea sector? Could you offer hints on possible areas?

Tea processing is energy intensive and requires both electrical and thermal energy, which account for upto 20% of the tea processing cost. Hence, it is imperative for tea industries to cut costs in order to stay ahead in the market, especially for exports where there is stiff competition from other countries.

Fortunately, the message of energy conservation has gone down well in the tea sector and owners are convinced of the benefits. I would say that the era of implementation has started in tea factories and primary focus is on electricity reduction.

Some of the interventions that have already made ripples include the usage of EE motors, VFD controlled combustion, flat belts, illumination optimization, dispense with vapor lamps, usage of aptly sized motors, etc. On the thermal side, the ball started rolling by way of briquette usage, adoption of combustion controllers, heat content related fuel cost reduction, etc.

I anticipate that 25 - 30% of reduction in both thermal and electrical energy costs of tea processing can be achieved, by adopting and implementing roughly 15 recommendations.

2. What implementation strategies have been tested for ENCON interventions and proved effective? What do you project to be the best measures to be taken in the future?

The implementation of ENCON schemes has been carried out in a couple of factories and encouraging results have been obtained. Further, some isolated ENCON measures have taken place in a couple of factories through their own initiative, but the results are not known yet.

What is now needed is the concerted effort of these factories towards unwavering implementation, availing the help of real-time experts, and I feel that this is where this project team comes into play.

I suggest that the stakeholders should come forward to share their experience / concerns towards implementation with the project team. I had already initiated action in this regard and made visits to a couple of forthcoming factories that are keen on implementation strategies. To some extent, these factories require additional support, which the project team is willing to offer.

The strategy planned as of now, is to take into confidence the stakeholders when moving forward.

3. What are the main barriers to certain implementation strategies and what solutions would you propose to overcome those?

For the implementation strategies to succeed, the following are the minimum requirements:

(i) Conviction of the industries regarding the adoption of ENCON measures

(ii) Selection of the right consultants / suppliers / implementers

(iii) Proper financial mechanism for effective implementations on site

(iv) A scheme for recording and analyzing post implementation results

(v) Detailed showcasing of results to all others

As an enabling mechanism, I feel the requirement of a coordinating agency to help the needy industries. As of now, no such one-stop-shop mechanism is in place and may be what is preventing things from happening.

4. Can you please explain how Induced Draft and Forced Draft fans optimize fuel usage?

The furnace burns all types of fuels, i.e. firewood (of different sizes and varying moisture levels), briquettes, tea bushes, wood wastes, veneer wastes and more. All these fuels are manually loaded onto the grate. There is an ID fan that exhausts the flue gas from the furnace. The performance study conducted by us on the fuel combustion revealed ineffective fuel combustion in the furnace.

The combustion is considered ineffective because of considerable carbon amounts in the burnt ash and the % of oxygen in the exiting flue gas. Also, manual feeding of fuel is quite erratic on the basis of quantity and time.

In order to overcome harmful combustion, I strongly recommend that a proper combustion system be adopted. Forced Draft fans optimize the supply of fresh air for combustion in controlled quantities and Induced Draft fans control exhausting flue gas, whereby a match between ratings of these fans with respect to fuel burnt can be obtained. Indeed, 20 factories have adopted this method already and reaped the benefits by way of not only reducing fuel consumption but also by continuous operation of the drier.

To render combustion even more effective, we are suggesting that factories install a VFD for the ID fan with ON–OFF control for the FD fan. In simple terms, we are making the fuel burn effectively, regardless of the fuel feeding method adopted by the operator. When this message spreads widely, I am sure that a substantial reduction in fuel consumption can be obtained.

5. You often advise people to go for a High Tension instead of a Low Tension connection. Could you please elaborate that point? Please explain how you would like to address this issue?

On the technical front, there are many advantages of using HT connections:

(I) Voltage fluctuations would be practically nil

(ii) Motor coil burnouts can be eliminated

(iii) Failure of capacitor banks can be avoided

(iv) Productivity improvements are possible

(v) The power cuts in the HT connection are usually intimated in advance, so production stoppage can be avoided (in LT connections there will often be unscheduled power interruption)

(vi) The total cost of power supply for a HT connection is Rs 4.50 / kWh (avg) including kVA charges, which is nominally lower than LT connection charges at Rs. 4.70 / kWh (avg) and which can avail only upto 150hp capacity

Nonetheless, the major hindrance for the tea factories to go in for the HT connection service is the seasonal production of tea.

Tea factories need large amounts of electricity during season and only 50% of that off – season. When opting for a HT connection, there is a fixed charge of Rs. 300 / kVA / month. Even a small factory would need at least 150 kVA of power, which amounts to a fixed charge of Rs. 5.5 lakhs / annum.

Therefore, in my opinion, we need to look out for the following:

1) Recommend an HT connection for tea factories that have a made tea production of more than 1 million kg / annum.

2) Raise the HP level to 200 for the factories producing < 1 million kg / annum, by declaring the sector an agro industry.

These measures would make the operation of factories viable not only on the production front, but also with regard to energy consumption.

6. Several measures have been taken towards the reduction of electricity consumption. How can similar savings be obtained in terms of thermal energy? How would you assess the potential of thermal energy conservation in the tea sector by use of technological interventions?

I assess substantial potential for thermal energy conservation in tea factories.

The methods I suggest are:

i) The use of controlled air supply and exhaust

ii) The use of briquettes and firewood of smaller size, with less moisture content

iii) The storage of fuel in closed spaces

iv) Analyzing the consumption and costs in terms of "heat rate" rather than "kg" alone

v) Designing a better and more efficient furnace (as the current design needs critical review)

vi) Fuel-drying in the yard prior to its utilization

I certainly expect a saving of 20 – 25% on fuel if these efforts are taken seriously.

7. As you have newly joined our project team, what can we expect from you next?

The project team has already made a good start in spreading awareness on the need and ways to implement energy conservation measures among tea factories. Energy audits have been performed and the reports have demonstrated much scope for energy conservation. Now more factories want to have audits performed, followed by implementation.

The implementation has to make a head start so that the benefits reach everyone. With my knowledge and experience in this line, gathered over the past 2 decades, I will definitely do my best to work out a proper plan of action for successful implementation of the schemes suggested by the project in the stipulated time schedule. I am also confident of receiving cooperation from all stakeholders.

ENERGY AUDIT METHODOLOGY FOR TEA FACTORIES

By Mr. Nalin Kanshal, Director, ELPRO Energy Dimensions

To maintain a clear focus on the objective of improving overall energy utilization, ELPRO Energy performs a detailed energy audit in tea factories. This approach is taken to ensure adequate dialog between all interested parties at key junctures during the project, so that only Energy Conservation Measures (ECMs) that are feasible from an operation and maintenance perspective are evaluated in-depth and incorporated into the final recommendations. ELPRO Energy typically adopts the following sequential process to conduct energy audits in tea factories:

Step 1 - Interview with Key Factory Personnel

During the initial audit, a meeting is scheduled between the audit team and all key operating personnel to kick off the project. The meeting agenda focuses on: audit objectives and the scope of work, factory rules and regulations, hours of operation, etc.

In addition to these administrative issues, discussions during this meeting seek to establish: operating characteristics of the factory, energy system specifications, operating and maintenance procedures, preliminary areas of investigation, unusual operating constraints, anticipated future plant expansions or changes in tea product mix, and other concerns related to factory operations.

Figure 1: *ELPRO auditors measuring energy consumption details*

ARTICLE

Step 2 - Factory Tour

After the initial meeting, a tour of the factory is arranged to observe the various operations first hand. Focus is directed on major energy consuming systems identified during the discussion, including the electrical and thermal areas.

Step 3 - Document Review

During the initial visit and the subsequent meeting, available factory documentation is reviewed with factory representatives. This documentation includes all available historical energy bills, factory operation and maintenance procedures and logs of major tea production equipment if maintained, records of wood / coal consumption, as well as utility bills for the previous three years.

Step 4 - Factory Inspection, Field Data Collection and Measurements

After a thorough review of the construction and operating documentation, the major energy consuming processes in the factory are further investigated, starting with the following sections: withering, CTC / orthodox, fermentation, drying, sorting and packing, in respective order. Field measurements are collected to substantiate operating parameters. All motors are logged for various parameters like Kw, KVA, KVAr, pf, current and voltage, for a certain period of time, using the latest power analyzers. Readings of withering troughs and hot air fans are taken using a pitot tube. A thermo anemometer is used to establish air velocities and calculate the fan efficiencies and withering trough effectiveness. Thermal measurements on the furnace and drier are taken using an infrared thermometer, measuring the material flow rates with scales, humidity measurements, wet and dry bulb temperatures, air flow rates, etc. Lighting levels are measured using a LUX meter for the factory shop floor and administration buildings and offices. The wood (fuel) moisture is also captured using a wood moisture meter. Exhaust gas analysis is done using a flue gas analyser.

Step 5 - Utility Analysis

The utility analysis is a detailed review of energy bills over the previous 12 to 36 months. This includes consumption of all purchased energy, including electricity, wood, coal, as well as of any energy generated on site. If possible, energy data is obtained and reviewed prior to factory visits, in order to ensure that visits to the site focus on the most critical areas. Billing data reviewed include energy usage, energy demand and utility rate structure.

Step 6 – Identification / Evaluation of Feasible Energy Conservation Measures (ECMs)

Typically, an energy audit will uncover both major factory modifications requiring detailed economic analysis and minor operation modifications offering simple and / or quick paybacks. A list of major ECMs is developed for each of the major energy consuming systems (i.e. motors in CTC, driers, fans in the withering section, furnaces, etc.). Based upon a final review of all information and data gathered about the factory, and based on reactions of factory personnel at the conclusion of the field survey review, a finalized list of ECMs is developed.

Step 7 - Economic Analysis

Data collected during the audit is processed and analyzed back in ELPRO offices. The data is consolidated and calculations are performed to reproduce the field observations and develop a baseline against which to measure the energy savings potential of the ECMs identified. Then, for each of the ECMs being investigated, the implementation cost, energy savings and simple payback are calculated.

Figure 2: *Data collection in a tea factory during DEA*

Step 8 - Preparation of a Report Summarizing Audit Findings

The results of the findings and recommendations are summarized in a final report. The report includes a description of the facilities and their operational details, a discussion of all major energy consuming systems, a description of all recommended ECMs with their specific energy impact, implementation costs, benefits and payback. The report incorporates a summary of all the activities and efforts performed throughout the factory with specific conclusions and recommendations.

The above, in summary, is the methodology adopted by ELPRO Energy to conduct detailed energy audits in tea factories.

ANALYSIS OF DETAILED ENERGY AUDITS

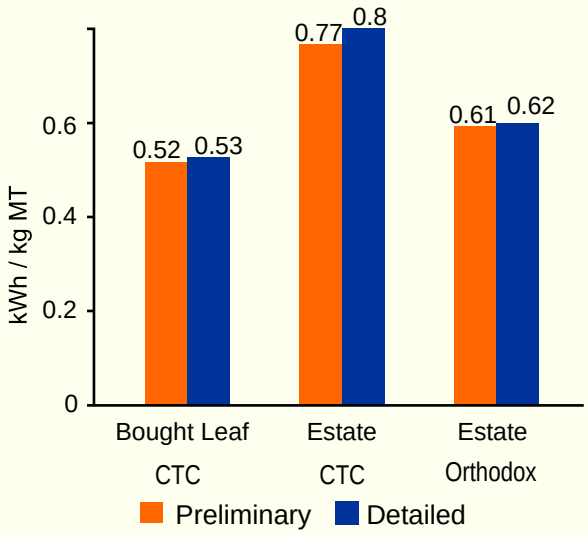
By Mrs. Svati Bhogle & Mr. R. Radhakrishnan, TIDE

ARTICLE

This is a report based on the analysis of the detailed energy audits conducted in 44 tea factories. This analysis indicates the general trends in energy consumption and it can assist in decision making about the way ahead for implementation of energy audit recommendations.

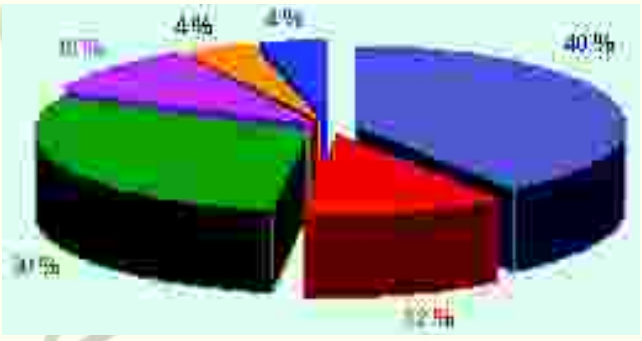
The project had conducted preliminary energy audits in all factories in south India. In the preliminary audit, data was collected from tea factories about energy consumption as a function of tea production without any actual measurements. As a first step, a comparison was made between the energy consumption as measured in the detailed audits and the secondary data of the preliminary audits of the same factories where these audits were conducted. As shown in the graph below, there was an excellent match between the data reported and the one measured:

GRAPH SHOWING COMPARISON BETWEEN PRELIMINARY AND DETAILED ENERGY AUDITS

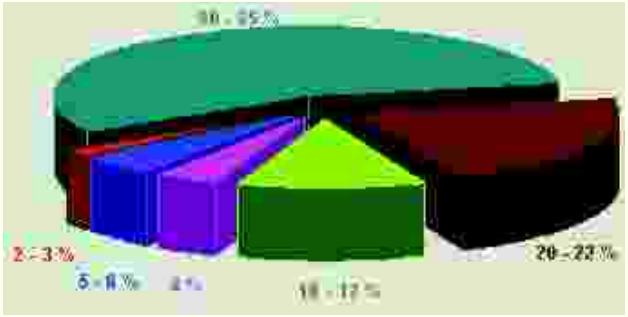


A comparison was also made between the section-wise energy consumption in bought leaf and estate CTC factories and the estate orthodox factories. The results are summarized below:

ENERGY CONSUMPTION PATTERN - ORTHODOX



ENERGY CONSUMPTION PATTERN - CTC



It is obvious that the major sections that need to be the focus of electrical energy conservation are the CTC / rolling sections.

Some broad inferences from the energy audit analysis are:

- Per kg of made tea, bought leaf CTC tea factories consume less energy than estate CTC tea factories.
- Withering in bought leaf CTC tea factories consumes less energy than withering in estate CTC tea factories.
- In estate tea factories, withering for orthodox tea consumes more energy than withering for CTC tea.
- Wood consumption in estate orthodox tea factories is the highest (2.13 kg / kg MT) followed by wood consumption in estate CTC tea factories (1.76 kg / kg MT) and bought leaf CTC tea factories (1.6 kg / kg MT).

While exhaustive data on electrical energy consumption was generated and its conservation strategy has been fairly well defined, the same is not yet true for thermal energy. Some options for thermal energy conservation have emerged and these involve fuel, equipment and process shifts.

Some options for thermal energy conservation that are being assessed with regard to reduction of energy use as well as cost implications are:

1. Storage of fuel (mostly firewood) in closed sheds for the prevention of daily deposits of dew and mist on the firewood. Data from the project team shows that in south India, firewood with moisture content of 30 - 50% is typically used in most factories.
2. The replacement of firewood with biomass briquettes
3. The use of solar air heaters to preheat air
4. The use of FD and ID fans to regulate the rates of air and flue gas flow respectively

5. The use of a Hot Water Generator instead of Air Heaters for hot air generation

The project would be ready with a detailed analysis of thermal energy conservation options for the next edition of EnConTea.

Essentially, the analysis also reveals that both thermal as well as electrical energy consumption in estate, bought leaf, CTC and orthodox tea factories are high and that there is considerable scope for energy conservation. It is possible to reduce energy consumption to the level of 0.50 - 0.55 kWh / kg MT of electrical and at least 1.1 kg of fuel / kg MT of thermal energy. If the sector collectively adopts all audit recommendations, at an estimated tea production of 200 million kg annually, the south Indian tea industry can save 4000 mWh of electricity and 100000 tons of biomass fuel annually, becoming one of the greenest industries in the country.

TEA & TOURISM CARNIVAL – THE NILGIRIS AUTUMN FESTIVAL

31st October to 4th November 2009, Ooty

The Nilgiris District Administration and Tourism Department Tamil Nadu, in association with the Tea Board (Ministry of Commerce & Industry) and the Nilgiris Hotel & Restaurant Association, organized a Tea & Tourism Carnival at the HADP Stadium, Udhagamandalam from Saturday 31st October to Wednesday 4th November 2009. The Nilgiris Autumn Festival held in Ooty, was given partial financial assistance and support from the UNDP GEF and the project. It strongly highlighted the beauty of the Nilgiris in all its facets.

Figure 1 : Inauguration of the Tea & Tourism Carnival

This event was graced by the presence of several dignitaries including Sri R. Gopalan (M.L.A., Ooty), Sri Anand Rao Vishnu Patil (Collector, Nilgiris District), Sri Rajendran (Chairman, Municipal Corporation, Ooty), Sri R.D. Nazeem (IAS, Tea Board, Coonoor), Sri K. Ramachandran (M.L.A., Gudalur), Sri Bharathi (Project Director, HADP), Sri B.S. Anand (President, Nilgiris Bought Leaf Association), Sri N. Chandrasekar (Secretary, Hotels and Restaurants, Ooty) and others.

More than 3000 people, including tea factory owners, tourists, school and college students from the Nilgiris district visited the Carnival over the 5 day period. To heighten the level of awareness creation at the event, floats (small vehicles) filled with posters, banners and miniature models of tea manufacturing equipment, travelled along various routes between the Ooty Main Bus Stand and the HADP Open Air Stadium. They drew the viewers' attention to the UPASI Energy Service Facility (ESF), tea plantations, and issues concerning floriculture, hand plucking of tea leaves and the need for protection of biodiversity.

The exhibition had several stalls in it and the project displayed and demonstrated newsletters, pamphlets, banners, brochures and posters related to tea and energy conservation, and later on the miniature samples of tea processing equipment which were transferred from the floats. These also served increased responsiveness of participating individuals to global climate issues and the importance of taking timely and effective measures to arrest environmental degradation. The different stages of tea production, various preparation methods, types of tea, quality issues and energy saving opportunities in the tea industry were explained to the visitors and participating individuals.

The Tea Board, UPASI and the project also organized a tea making competition for tourists, hotel chefs, housewives and tea makers of factories. Different types of tea making methods were demonstrated during the competition. Further, several teas were prepared, including black tea, lime tea, chocolate tea, jasmine flavoured tea, ghee, honey and ginger added tea. The teas were tasted by participants and allotted marks accordingly. The public was also invited to have a taste of the vast variety of teas. Mr. R.D. Nazeem, Executive Director of Tea Board, awarded the winning prize for the best tea maker during the competition.

Figure 2 : Mr. R.D. Nazeem (Executive Director, Tea Board), Mr. Anand Rao Vishnu Patil (Collector, Nilgiris) visiting the stall of Tea Board, TIDE & UPASI

The Carnival also featured debates, quizzes and various competitions for schools and colleges.

The exhibition presented various types of tea, allowing visitors to taste and explore the differences and simultaneously benefit from the many health enriching properties thereof.

Some valuable health aspects of tea are:

- Tea increases the metabolic rate by speeding up

oxidation, improving insulin sensitivity and glucose tolerance. It also raises thermogenesis (the rate at which calories are burnt). It also supports endurance by enhancing fat metabolism.

- Tea boosts mental alertness by actively altering the attention networks of the brain and increasing brain-wave activity, resulting in a calm, yet more alert, state of mind.
- Tea boosts the immune system by improving the body's response when fighting infection and heightening its disease-fighting capacity. In fact, production of anti-bacterial proteins is upto five times higher in tea drinkers.

Debates were held both in Tamil and English and the finals took place at the HADP Open Air Stadium, with students from various schools taking part.

Competitions were held in disciplines such as painting, poster-making, rangoli designing, tea-making and mehandi drawing.

Through comprehensive discussions, educational institutions, as well as tea factory owners and tea growers, tourists and other visitors were made aware of important issues related to energy saving opportunities and methods of improving the quality of tea. Indeed this information-rich Autumn Festival of The Nilgiris was an interesting and simultaneously effective way to bring various groups of people together and allow them to indulge in an enlightening tea and tourism experience.

PROMOTING ENERGY CONSERVATION IN THE TEA SECTOR
26th October 2009

Awareness Program on Energy Conservation in the Tea Industry

An awareness program on energy conservation in the tea industry was organized for bought leaf tea factories in the Nilgiris. 35 factories participated to benefit at this meeting.

Two presentations were made, by Dr. Sethumadhavan, Anna University and by Mr. Nalin Kanshal, ELPRO.

In Dr. Sethumadhavan's presentation on Energy Conservation in Tea Factories, he discussed the benefits of energy audits conducted in tea factories. He elaborated on energy saving opportunities in individual sections of the tea making process, by offering energy saving calculations and an estimate of how much can be conserved at each stage and how. There was also much informative interaction with individual factory owners, who put forward questions they wished to have answered in order to make fruitful investment and implementation decisions with regard to their respective tea factories.

Mr. Nalin Kanshal made a presentation on Barriers to Energy Conservation, addressing details of energy audits and obstacles to the implementation of findings therein. He further explained the ESCO model of implementation, energy audit instruments as well as the quality of energy audits. Moreover, he spoke about the energy service facility at UPASI and of various benefits that can be availed by making use of the same.

An energy conservation program going into details was welcomed and there were requests for similar programs in other regions.

Buyer & Seller's Meet at CTTA

A buyer and seller's meet took place at the Coonoor Tea Trade Association (CTTA), which the project organized for bought leaf tea factory owners. The main objective of this meeting was to create awareness about energy efficient lighting systems, stabilizers and energy saving devices.

The various sellers who participated at the meeting, set up their stall at the CTTA, to demonstrate their products, discussing salient features of each equipment and offering visitors products of supreme quality and the best market prices.

Representatives of 5 supplier companies, namely GE Lighting, Reliance Agencies, Abanca Energy Saver and from Stabilizer Manufacturers Bright Electro Controls and Excel Automatic, took part at this buyer and seller's meet.

Figure 1 : Dr. Sethumadhavan (Professor, Anna University), Mr. Ramesh (Secretary, Nilgiris Bought Leaf Association), Mr. B. S. Anand (President, Nilgiris Bought Leaf Association), Mr. Nalin Kanshal (Director, ELPRO) at the Buyer and Seller's Meet in CTTA

Manufacturers of energy efficient lighting systems displayed different lights such as T5 Tube Lights, CFLs and LEDs. They were open to discussions with factory owners and also explained details of energy savings using these products. The primary objective is to provide the maximum amount of lighting at the lowest possible power consumption rates. In the tea industry, 3-6% of the total energy consumption is spent on lights. The specific consumption of electrical energy for lighting is 0.022kwh and this can be reduced to 0.017kwh by using energy efficient lighting. This, in turn, saves 23 paise / kg of made tea.

EVENTS

Implementation Demonstration Visit at Kaikatty INDCO Tea Factory

Data is continuously collected in Kaikatty to capture variations in energy conservation during the lean season, times of high humidity, etc.

25 owners of Nilgiris bought leaf tea factories visited the implementation demonstration at the Kaikatty INDCO Tea Factory in Coonoor. The factory's Managing Director Mr. Swaminathan and Dr. Sethumadhavan explained commercial and technical aspects of energy saving equipments for tea processing respectively.

Mr. Swaminathan explained several details of energy conservation in each section of the tea manufacturing process. Dr. Sethumadhavan elaborated on the technical aspects of the newly installed machinery.

Figure 1: Bought leaf tea factory owners at Kaikatty INDCO, viewing energy efficient motors in the CTC section

Kaikatty has plans to introduce more energy conservation measures such as solar air preheating.

MINISTRY OF NEW AND RENEWABLE ENERGY (MNRE): SMALL HYDRO POWER DIVISION ANNOUNCES FINANCIAL SUPPORT FOR PRIVATE SECTOR SMALL HYDRO POWER PROJECTS

The Small Hydro Power division of the Ministry of New and Renewable Energy has recently announced a scheme for financial support of private sector Small Hydro Power projects. Tea estates come under this category and are eligible to apply. The quantum of technical support for projects upto 1 MW is Rs. 20,000 / KW for north eastern regions and Rs. 12,000 for south Indian estates. The procedure to avail a subsidy has been simplified and is as follows:

1. Identify the project & prepare the project report
2. Inform the state nodal agency. It may be possible that the Tea Board takes on the role mandated for the state nodal agency.
3. The state nodal agency has to inspect the project site and offer recommendations to the MNRE.

   The following documents would have to be handed over to the state nodal agency:

   A. Two copies of the project report covering various aspects of the project, its implementation, the completion schedule, operation & maintenance and cost estimates.
   B. State government's approval for implementation of the project. (This is not required for private developers).
   C. Proof of commitment of funds to meet the project costs.
   D. Proof of land availability required for the project.
   E. Application form as per Annexure "E" page no. 30 - to be handed over to the state nodal agency.
4. The state nodal agency is to forward their recommendation to the MNRE.
5. After completing the project, the consultant / project developer is to inform the state nodal agency.
6. The state nodal agency is to forward the completed report to the MNRE.
7. The MNRE is to release the payment directly to the developer.

This scheme would be effective upto 31 December 2012. The tea estates are requested to avail of this opportunity and establish contact with Small Hydro Power project consultants. For contact details of Small Hydro Power consultants and the details of this scheme, please contact the project office at the Tea Board, Coonoor. Readers from the north east are requested to contact the ED Guwahati for further assistance.

Editorial Team

Chief Editor

Mr. R.D. Nazeem, I.A.S.,
Executive Director
Tea Board, Coonoor

Assistant Editors

Mrs. Svati Bhogle, TIDE
Ms. Asha Ramaswami, TIDE

Design & Print

Mrs. Poulomi Deb, GRAPHICSHAPES
www.graphicshapes.com

Contact

TIDE Project Office
Tea Board Zonal Office
Shelwood, Coonoor Club Road
Post Box No. 6
Coonoor - 643101
Phone: 0423 2222090
e-mail: encontea@bsnl.in

TIDE
#19, 9th Cross Road, 6th Main Road
Malleswaram
Bangalore 560003
Phone: 080 23315656
Fax: 080 23344555
e-mail: tide@vsnl.com