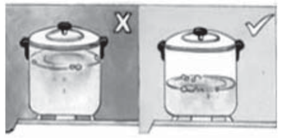
remember that surplus water wastes fuel. Besides, when the excess water is drained subsequently,



precious nutrients are lost. An experiment on cooking rice with double the required quantity of water has revealed that fuel consumption increased by 65%. So use only the optimum quantity of water for cooking.

Remember

Surplus water consumes additional fuel which could otherwise be saved.

Reduce the flame when boiling starts

When a vessel's contents reach boiling point, a low flame is enough to keep them boiling. Addition of more heat at the boiling stage causes further evaporation of the liquid without serving any useful purpose. Hence, when water or any other liquid is boiling, reduction in the flame will reduce wastage. This is possible in a gas stove by turning the knob to 'simmer' position or in a kerosene stove by lowering the wicks. Experiments conducted have revealed a saving of 25% fuel when the flame was reduced after boiling had started. Try it yourself. You will find that the time taken to cook is just the same.

Remember

Always reduce the flame once boiling starts.

Soak before cooking

Experiments have shown that soaking ingredients such as dal and rice for various intervals of time before cooking saves fuel. 250 gms of kabuli chana (chick peas) when soaked overnight in water consumed 22% less fuel as compared to the fuel required for the same quantity of unsoaked kabuli chana.

Remember

Sizeable savings in fuel are possible if you soak cereals in water before cooking.

Shallow, wide vessels save fuel

A visible flame touching the sides of vessel wastes fuel since it gives out heat to the surroundings. But if you cover the flame as much as possible by using a broad vessel, you will save fuel. Our tests have established that for most stoves, a vessel of 25 cm. diameter is ideal for cooking. A vessel of this diameter tends to cover the flame completely. Where a narrower

vessel cannot be avoided, try and reduce the flame so that it does not creep up on the sides of the vessel

Remember

Hide the flame with broad bottomed, vessel. Do not use vessels which are narrow as they allow the flame to creep up on the sides

Put the lid on heat losses

It is a good practice to cover cooking vessels and pans with a lid, as an open vessel loses heat to the atmosphere which means a waste of fuel. A vessel of 100sq.cm. opening , containing hot water at 96°C would waste 7.2 GMs Of gas per hour. The heat loss would increase by 2-1/2 times if there is wind blowing through the kitchen. If the vessel is covered by a lid , the heat loss would drop appreciably to 1.45 gm. Of gas per hour as heat is retained within the vessel.

Remember

Always place a lid on an open cooking vessel or pan

The small burner saves fuel

A cooking gas stove has a big burner and a small burner. The small burner consumes 6% to 10% less gas than the big burner! An experiment on cooking

250 GMs Of potatoes revealed that the small burner consumed 6.5% less gas but took 7 minutes more than the big burner. Similarly in a kerosene stove, by cooking at lower flame you will use less fuel. You can now imagine how much fuel is being avoidably wasted.

True, the small burner of the lower flame takes a little more time to complete cooking, but then you are not always in such a hurry that you can afford to waste fuel.

Remember

Use the small burner or lower flame more often, as the case may be especially when you have time to spare.

A clean burner helps save fuel

It is important to/clean the burner of your gas range regularly and trim or replace the wicks of the kerosene stove. Soot clogged gas burners and charred wick-ends of a kerosene stove increase fuel consumption. Regular maintenance of your stove helps you save fuel. In case stove knobs do not more freely, get them attended to.

Remember.

A bright, steady blue flame means efficient burning. If you see an orange, yellow on non-uniform flame, clean the burner or wick as the case may be

For additional saving

The use of 'ISI' marked kerosene wick stoves in place of non-'IST' marked stove saves upto 25% of

kerosene and the use of higher efficiency 'ISI' marked LPG stove (the thermal efficiency level of which is 68%+) saves upto 15% of gas.

Clean vessels help too

A coating of undissolved salts is usually found on the insides of kettles and cookers. Even a millimeter thick coating can reduce the flow of heat to the vessel's contents. This increases your fuel consumption by as much as 10%.

Remember

Cooking vessels should always be scrubbed clean.

Allow frozen food to reach room temperature before cooking

Cold milk, frozen meal or any other cold food-stuff from the refrigerator should not be taken straight to the cooking pot. Keep it out of the refrigerator for some time before putting if on the stove. Very cold food consumes a larger amount of fuel.

Plan your meal timings

If all members of the family eat together, which signifies togetherness and increases joy, frequent reheating of food before serving can be avoided. If eating together is not possible, store cooked, hot food in insulated containers to serve it hot later.

(Courtesy: web site of Petroleum Conservation Research Association www.pcra.org)

Can she demand clean energy as a fundamental right?

Having no access to LPG and Electricity, our rural women folk use firewood for cooking and kerosene for illuminating their hutments after dawn. Both the fuels pollute their humble dwellings. More than 40% of population in our country does not have access to clean energy. As per a survey finding; the lungs of these women resemble that of a heavy smoker because of the firewood smoke inhaled by them. What will happen if such a large population without access to clean energy starts demanding it as their 'Fundamental Right'?

Would you like to save LPG so that the same could be made available to the less fortunate rural women? If your answer is Yes, then pl. join IAEMP's Home Energy Management Programme to know how you can contribute from the comfort of your home. Please Contact:

Join IAEMP's Home Energy Management Programme
Please contact:
Sunil Sood, National Convener, HEMP
e-mail: sunilsolar@yahoo.co.in Mobile: 09386778963

Project Profile for establishment of a

"Local Environment Protection Agency"

Since commercialization is the mantra of the day, why not commercialise the protection of the environment?

The environment of our cities is rapidly deteriorating. The ever-increasing human and vehicular population is making life tougher in cities day by day. Of all the environmental problems which affect the residents, the problems connected with the management of solid and liquid wastes are of very serious nature. These persist despite the serious efforts made by the authorities concerned. Local bodies and NGOs both have not been successful in providing the best solution for these problems.

A close look at the functioning of the municipal corporations and the NGOs will reveal that the shortage & mismanagement of funds are the main reasons for the non-performance of these bodies. The municipal corporations spend most of their money in distributing salaries to the staff and for the upkeep of vehicles and buildings. The NGOs are also required to pay salaries to their staff and the workers.

The solution lies in recognizing the fact that today's society is highly individualistic and self interest is of prime concern in everybody's mind. Commercialisation is the order of the day and almost everything including health and education has been commercialised. Then why not commercialise the activity of protection of the environment? If it becomes a business opportunity, then there will be many persons who will be willing to invest money to take care of the environmental problems. This concept can be popularized by promoting Local Environment Protection Agencies (LEPAs) in some of the residential areas in each city and bigger towns of the country.

The LEPA can also be involved with the activities of planting and protection of trees as well as cleaning of unwanted growth of parthenium, etc. Besides, they can be utilised for water harvesting & recycling, backyard/rooftop vegetables gardening, cleaning of roads, garbage issues, and such other activities. The agency can also provide services to promote recycling and reuse of household gadgets and items of daily use.

The scope of the services can be extended to spheres of urban life that affect the socio-political environment and the LEPA can act as a watchdog for untoward incidents and acts of terrorism, etc.

Objectives

The objectives of the EPA can be as follows :

- To provide services for door to door collection of solid waste
- To provide services for drainage & manhole cleaning
- To act as a link between the municipal body and the resident's association
- To provide services for planting and maintenance of trees
- To provide services for cleaning and maintenance of the roads
- To provide services for water harvesting & recycling
- To provide services for establishment of backyard/ rooftop vegetable garden.
- To provide a link for recycling/ sale of used household items and gadgets.
- To provide intelligence services to security agencies for prevention of criminal activities in the locality.
- To act as a link for Car pools and other initiatives of the residents.

Market potential

With the ever-increasing urbanisation and privatisation of the housing sector, everyday new projects are announced by the builders and colonisers. Further, there are group housing co-operative societies and other schemes coming up in every corner of our cities and towns, Thus there is a huge potential for starting a Local Environment Protection Agency which can offer complete services on a turnkey basis.

With proper marketing of the concept, local municipal corporations can be convinced about the need to hire the services of LEPAs in order to optimize their resources. The concerned local urban bodies can be approached with such proposals.

Facilities and resources required

For establishing a Local Environment Protection Agency, following facilities and resources are required to be organized :

1. Small office at a central place of the locality with telephone facility
2. Tools & appliances for cleaning of drainage systems, collection of solid waste, plantation & upkeep of trees, etc.
3. Vehicle & tri-cycles
4. Space adjoining the office for keeping tools and appliances
5. Margin money for working capital
6. Trained manpower

Methodology of establishing and managing the agency

Local Environment Protection Agency can be established and managed successfully by adopting the following methodology:

- Signing of MOU with the builders/municipal bodies & forest dept.
- Selection of the site for location of the Agency.
- Setting up office infrastructure and purchase of tools & appliances
- Training of manpower
- Printing of brochures/publicity material
- Door to door contact with residents
- Commencement of services
- Feedback & coordination

Financial analysis

Land & building

The building will be required for office & storage of tools & appliances. The area required will be 1000 sq.ft. out of which 200 sq. ft. will be covered area which will be hired on a lease basis. The Security Deposit for the premises has been considered as Rs.100,000 while the monthly lease rent will be Rs.10000.

Fixed assets

The fixed assets for the Agency shall consist of tools & appliances, furniture, vehicle, tri-cycles etc.

S.No.	Particular	Qty.	Cost (Rs.)
1	Vehicle (2 wheeler)	2	80,000
2.	Tri-cycles	4	40,000
3.	Tools & tackles	LS	50,000
4.	Furniture	LS	20,000
5.	Telephone & Mobile	1	20,000
6.	Miscellaneous	-	10,000
		Total	**2,20,000**

Preliminary & pre-operative expenses

The preliminary & pre-operative expenses are estimated to be Rs.60,000

Manpower requirement

Sl. No.	Particular	Qty.	Monthly Salary (Rs.)
1	Supervisor	1	15,000
2.	Office Attendant	1	6,000
3.	Skilled Workers	3	15,000
4.	Helpers	3	9,000
		Total = Rs. 45,000	

Other monthly expenses

Sl.	Particular	Expenses (Rs.)
1.	Electricity	2,000
2.	Telephone & Mobile bill	2,000
3.	Conveyance	4,000
4.	Miscellaneous	5,000
	Total = Rs. 13,000	

Working capital requirement

The total expenses on rent,manpower & other expenses works out to Rs.68, 000 per month. The working capital requirement has been considered for meeting monthly expenses for 2 months period which works out to Rs.1,36,000 or say Rs,1,40,000.

Cost of the project

1.	Land & Building	Rs.100,000
2.	Fixed Assets	Rs.2,20,000
3.	Preliminary & pre-operative expenses	Rs.60,000
4.	Working Capital	Rs.1,40,000
	Cost of Project	**Rs.5,20,000**

Means of the Finance

1. Contribution of entrepreneurs 25% Rs.1,30,000
2. Loan 75% Rs.3,90,000

Estimates of revenues

The source of revenue will be monthly subscription from the municipal corporation, resident associations, shopkeepers and other residents for regular services and earnings from specific services.
The annual revenue from all the services has been estimated to be Rs.15,00,000.

Profitability estimates

1.	Gross annual revenue	Rs.15,00,000
2.	Annual working expenses	Rs.,8,40,000
3.	Interest on Bank loan	Rs.45,000
4.	Depreciation of fixed assets (10%)	Rs.22,000
5.	Net Profit (1-2-3-4)	Rs.5,03,000
6.	Monthly Profit	Rs.42,000

Best deal for unused items in your Home - Go for 'Exchange Offers'!

Every item we bring home has a useful life of its own. Each item has its own expiry date as far as its useful purpose is concerned. Often we buy some items which are hardly used. These items are simply kept lying around and not only occupy useful space but also create negative energy in the home. It is especially true with cloths, shoes, bags, utensils, furniture etc which refuse to get worn out and we get bored with them. Keeping such items for very long does not serve any purpose. It is also against the 'Vastu Shastra' to keep such items in the home. We strongly advice that all such items should be put in the recycle or reuse route at the earliest. To put in other words, we need to do the 'last rites' (Antim Sanskar) of the items which we do not need any more. This can be done in the following ways:

1. By directly selling to the prospective buyers
2. By donating the items to your household helps
3. By Selling to the 'Raddi wala', or
4. By availing exchange offers to buy items which we really need.

Recently,'Big Bazar' chain oragnised an 'Exchange Offer' to buy the old papers, cloths, shoes, bags, utensils etc against purchase of new items under certain terms and conditions. We recommend the readers to make use of such offers intelligently and not end up in buying any unwanted item in exchange!

March, 2010

HEM News

web : www.iaemp.org ♦ e-mail : sunilsolar@yahoo.co.in ♦ Mobile : 09901911910, 09386778963

A monthly newsletter on "Home Energy Management Programme" of IAEMP

Bad Driving Habits may increase your fuel bill!

Is your vehicle giving less mileage despite the good maintenance? Please ensure that your bad driving habits are not responsible for the low average. Here is the check list;

- Gear changing without use of clutch
- Improper synchronization of gears and vehicle speed
- Tendency to drive in top gear in congested city traffic
- Switching off the engine while in gear
- Unnecessary idling
- Racing engine for removing crowd
- Clutch riding
- Delayed acceleration after shifting to higher gears
- Poor anticipation of curves and sudden shifting to lower gears at high speeds
- Tendency for over-speeding
- Raving and longer travels in lower gear
- Jack rabbit moving
- Sudden and erratic acceleration
- Delayed gear changing
- Rash and rough driving
- Poor anticipation of obstacles & sudden brake application
- Negotiation of curves at high & uncontrollable speeds
- Use of clutch & accelerator for holding vehicle on gradient

All eees not well - TRUE CONFESSIONS BY AN IIT ALUMINI

I am an alumni of IIT Mumbai. A couple of years ago, I along with other IIT alumnis carried out energy audit of IITB. We were doing this assignment free of cost. However, the observations and findings were heart breaking. Some sample figures:

1. In hostels students, who do not pay for electricity were consuming 175 kwh per month per student (without water heating, canteen etc.) while the families (3 to 5 people) of watchmen's etc., who pay bills, were consuming less than 125 kwh. A population of 11000, having an electricity bill more than Rs.90 million is really amazing.
2. It was surprising to know that 'Solar man of India' Dr. Sukhatme, was director of Institute for so long, but hostels and guest houses still do not have solar water heaters, which is established technology. There are senior staff working on heat pumps and giving consultancy to other firms, but in IIT there was no such installation seen at any location.
3. Water consumption in the campus was 600 liters/capita/ day. This can not be justified by any standards.
4. Huge saving potential existed, mainly through motivation and some potential in pumps and air conditioners. Not much interest was seen in the authorities for implementing. Very typical govt. styled functioning exists.

If we IITians do not believe in what we teach and what we pursue in real life, it's really a hypocritical situation. With IITs having energy management departments giving Ph.D.s and M.Tech. Degrees, it should have placed a model of efficient energy use in front of others. Unfortunately the situation is exactly other way, they are showing how energy can be wasted!

There are so many things we can talk of. In a nut shell I am convinced that IITs are really wasting precious funds from society/govt. IITs are doing well only because the stuff that gets in there is really the cream of intellectuals but I have started doubting the contribution of IITs. (Few surveys show that more than 90% of those who pass out work in management and software, rather than in the core areas they studied.) Are we giving them due beyond their worth?

Milestones in the History of Energy & Its Uses

Energy has a long history. Beginning back before people could read and write, fire was discovered to be good for cooking, heating and scaring wild animals away. Fire was possibly civilization's first great energy invention, and wood was the main fuel for a long time.

1600's	Isaac Newton was one of the world's great scientists because he took his ideas, and the ideas of earlier scientists, and combined them into a unified picture of how the universe works. Isaac explained the workings of the universe through mathematics. He formulated laws of motion and gravitation. This led to measurements and predictions of all things scientific. The development of the steam engine by James Watt was one of the most significant technologies in history.
1700's	After eons of superstitious imaginations about electricity, Ben Franklin figured out that static electricity and lightening were the same. His correct understanding of the nature of electricity paved the way for the future.
1800's	Mathematical theory of electromagnetic fields was published. Maxwell created a new era of physics when he unified magnetism, electricity and light. One of the most significant events, possibly the very most significant event, of the 19th century was Maxwell's discovery of the four laws of electrodynamics ("Maxwell's Equations"). This led to electric power, radios, and television.
1900's	Special theory of relativity written. Albert Einstein created a new era of physics when he unified mass, energy, magnetism, electricity, and light. One of the most significant events, if not the very most significant event, of the 20th century was Einstein's writing the formula of $E=mc^2$: energy = mass times the square of the speed of light. This led to nuclear medicine - and a much longer life span, astrophysics, and commercial nuclear electric power.

Signficant Events in the History of Energy By Fuel

Wood

Pre-1885	Wood was the primary source for cooking, warmth, light, trains and steamboats. Cutting wood was time consuming, hard work. A common and meaningful poem was:"Treat your wife fair and good, keep her stocked with firewood"

Electricity

1700's	After eons of superstitious imaginations about electricity, Ben Franklin figured out that static electricity and lightening were the same. His correct understanding of the nature of electricity paved the way for the future.
1830-1839	Michael Faraday built an induction dynamo based on principles of electromagnetism, induction, generation and transmission.
1860?s	Mathematical theory of electromagnetic fields was published. Maxwell created a new era of physics when he unified magnetism, electricity and light. One of the most significant events, possibly the very most significant event, of the 19th century was Maxwell's discovery of the four laws of electrodynamics ("Maxwell's Equations"). This led to electric power, radios, and television.

Coal

1763-1774	Pumping water from coal mines was a most difficult and expensive problem. The steam engine developed by James Watt during these years provided the solution. Watt's steam engine remained basically unchanged for the next century and its uses expanded to change the whole nature of industry and transportation.
1885-1950	Coal was the most important fuel. One half ton of coal produced as much energy as 2 tons of wood and at half the cost. But it was hard to stay clean in houses heated with coal.
Late 1860?s	The steel industry gave coal a big boost.
1982	Coal accounted for more than half of the supply of electricity but little was used in homes. In terms of national electricity generation, hydropower, natural gas, and nuclear energy contributed between 10 and 15 percent each.

Oil

1890	Mass production of automobiles began, creating demand for gasoline. Prior to this, kerosene used for heating had been the main oil product.
1951-present	Oil has given us most of our energy. Automobiles increased the demand for oil.

Nuclear

1906	Special theory of relativity written. Albert Einstein created a new era of physics when he unified mass, energy, magnetism, electricity, and light. One of the most significant events, if not the very most significant event, of the 20th century was Einstein's writing the formula of $E=mc^2$: energy = mass times the square of the speed of light. This led to nuclear medicine - and a much longer life span, astrophysics, and commercial nuclear electric power.
1942	Scientists produced nuclear energy in a sustained nuclear reaction.

एक शहर की गुजारिश

मैं एक शहर हूं
मेरी गुजारिश सुनो।
मैं साफ सुथरा रहना चाहता हूं,
मुझे गन्दा मत करो।
थूक भरी सड़कें,
और गंदी दीवारें,
बेतरतीब दुकानें
घरों की कतारें,
सड़कों को संकरा कर
बढ़ते हुए दासे
मुझे नहीं भाते ये धुंधलके कुहासे।
मुझे पूरी दुनिया की अपनी बिरादरी के साथ
तनकर खड़ा होने दो।
मैं एक बढ़ता हुआ शहर हूं
मुझे सलीके से बड़ा होने दो।

Published by Sunil Sood on behalf of Indian Association of Energy Management Professionals and Printed by I.D.Publishing, Ranchi. (M. 94311-82812)

Editorial

What's in it for me?

K.Jayalakshmi

All it took was one mistake for the whole of climate science to be dismissed as anthropogenic fraud. Why this happened is simply because people find it easier to accept something convenient rather than something drastic which expects them to change lifestyles and ways of thinking. Nobody wants to think of anyone beyond his or her individual selves and immediate family. Nobody wants to think of tomorrow, today's world is one of yogis living for the moment! But sadly, the yogis have not yet tapped into the collective unconscious state where they can perceive the world as an extension of themselves.

Unfortunately, this selfish state is not restricted to the common man but also the experts who preach these very sermons. In premier institutions of the country, those that have the knowledge and wherewithal to change, there is apathy and inertia. The very experts who will go out and 'spread' the message of efficiency and conservation do not practice it in their institutions. Why? This disconnect must be corrected.

Energy management will have to plough a tough track. As long as power is plenty and cheap, nobody is going to be persuaded to go slow on consumption. Why should we bother about the next generation? Community living is fast disappearing, even in rural areas.

In such an individualistic scenario, the only way out is to commercialise every activity. The answer to: what's in it for me? Make money!

Then suddenly reducing emissions and energy consumption makes sense. If you make money in the process, why not? That is the mood of the times. That is also the approach we need to take at HEMP. Whether it is about saving fuel at home or disposing waste, we need to look at it from a commercial point of view.

Whoever is motivated to take up environment protection at the local levels must be given a solid framework within which he/she operates and makes money while working for a noble cause. There is much work to be done in this area - solid waste disposal, roof gardens to make communities self-sustainable, planting and maintaining trees, recycling household gadgets, etc. Leaving it to a few individuals who are sensitive to the issues will not be sustainable. A business approach is the only solution. For now.

Best HEMP campaigner of the month

Mr T.N.Agrawal, Life Member of IAEMP and State Coordinator for Maharashtra was adjudged as the Best Campaigner for the month of February,2010 to promote Home Energy Management Programme. His presentation during a one day business meet held at Nagpur on 20th Feb,2010 was voted as the best and subsequently he conducted a programme at Nasik for members of Maharashtra Chamber of Commerce, Industries & Agriculture (MACCIA) on 24th Feb. 2010.

The programme was attended by hundred plus members of MACCIA including eminent personalities like Mr. Digvijay Kapadia, President (MACCIA), Mr. R.K. Pawar, SE (NMC) as Guest of honour. Mr. Vijay Kothari, Chairman, The Institution of Engineers, Mr. Sanjay Londe, director, Sshoka Buildcon Ltd. Mr. Prashant Patil, Principal, Mahavir Polytechnic,Mr. Nimani, VP (MACCIA) & other members & students of Engineering colleges.

Mr Agrawal may be reached at e-mail : trilokus@yahoo. com, Mobile No. : 09422770079 for conduct of awareness / training programmes on Home Energy management Programme in the state of Maharashtra.

Mr T.N.Agrawal Conducting the HEM programme

Young professionals designing steel plants learn how to manage energy and resources at home!

An awareness programme on Home Energy Management was conducted at Ranchi on 7th March'10. The programme conducted by Sunil Sood, HEMP National Convener, at his residence was attended by five young professionals working with MECON Ltd. in various disciplines. The participants who are engaged in designing and project management of large integrated steel plants and normally tuned to everything big, were quite happy to learn how the small savings could help solve the energy crisis in big way. The photograph shows participants (L to R) Bratati Goswami,Surjeet Kumar Dutta,Roumya Darshan Ray, Abhay Kumar and Meenakshi Malviya.

Conserving fuel in the kitchen

Make Gas & Kerosene last longer

Do you know that housewives can save up to 30% of cooking gas or kerosene by following a few simple 'fuel–saving tips'?

PCRA has conducted a series of experiments on how to save cooking gas or kerosene. This was done in collaboration with the Indian Oil Corporation Ltd. (R&D Center), and the Institute of Hotel Management and Catering & Applied Nutrition, NEW Delhi. The experiments have revealed that it is possible to save up to 30% of cooking gas or kerosene by following good cooking practices. It will be surprising to discover that certain cooking habits cause substantial waste of fuel.

Given below are a few tips on how to minimize losses and get value for the money you spend on cooking gas or kerosene:-

A few minutes of planning ensures a big fuel saving

You can avoid an idle flame if you prepare and keep all materials required for cooking within reach, before lighting the stove. Experiments have revealed that keeping the flame of the larger burner burning unnecessarily in a gas stove, results in fuel loss. Even a few paise saved everyday will amount to a sizeable saving by the end of a month.

Remember

Light your stove only after you have kept all the ingredients within your reach and ready for cooking. Put off an idle flame at once.

Pressure cooking saves fuel

Pressure cooking is one of the fastest and most economical ways of cooking. Experiments have shown fuel (kerosene or cooking gas) savings of 20% on rice, 46% on soaked gram dal and 41.5% on meat, as compared to ordinary cooking. The savings in cooking time were equally high. To obtain further savings from a pressure cooker, use the separators of the cooker to cook different items such as rice, vegetable and dal, all at the same time. Just think of the fuel and money you will save! And have your entire meal ready quickly.

Remember

Pressure cooking saves duel and time. Use separators in the pressure cooker to cook different items at the same time.

Use optimum quantity of water

The quantity of water used differs for various dishes. And even for the same dish, different housewives use varying quantities of water. Since water is extensively used in cooking, you should