

**A NATION POWERING
A GREEN FUTURE**



**SAVE MONEY!
SAVE THE WORLD!**

A competition was launched, in collaboration with the Sir Arthur Lewis Community College, to produce an inspiring logo and slogan for this Public Energy Awareness campaign.

The winning logo was submitted by Lena Taupier and the slogan was contributed by Wendell Satnay. Both are students of the college.



Recycled Paper



The 'Technical Assistance for Implementation of the Energy Component of the SFA EU Banana Support Programme 2006' project is implemented by PPA Energy in consortium with AETS.

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'Save Energy Costs'

A Guide



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Where to find more information

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The spreadsheets you can use to track, monitor and analyse your energy consumption against your targets are available for download at

www.stlucia.gov.lc

www.climatechange.gov.lc



The Project

This guide is executed under the EU SFA-2006 Energy Programme and implemented by the Ministry of Physical Development and the Environment through its Sustainable Development and Environment Section. The key objective of this programme is to assist the Government of Saint Lucia to move towards attaining its target of becoming a Sustainable Energy Demonstration Country. The assistance is provided by a consortium of two specialist international energy consultants - PPA Energy of the UK and AETS of France.

The main deliverables under the programme include assistance to the Government on the implementation of the National Energy Policy recently endorsed by the Cabinet of Ministers, by creating an enabling environment, both regulatory and institutional, for the introduction of indigenous renewable energy to the national energy mix including wind, geothermal and solar energy resources. The programme includes the development of proposals for the establishment of a regulatory commission for the electricity sector which, at a later stage, may be integrated into a regional regulatory body for the OECS countries. The programme also includes the development of a liberalisation strategy for the energy sector consistent with the National Energy Policy to encourage private sector investment in the energy sector. A further key deliverable from the programme is to conduct an analysis of the level of awareness of Saint Lucians on energy issues and to develop a long term national energy awareness strategy and short term plan. Surveys have been conducted for the hotel and commercial sectors to test the level of awareness on energy issues. Energy efficiency and conservation strategies have been developed to target specifically the public, hotel, commercial and transport sectors. These will be disseminated at events to be conducted by the consultant and the Sustainable Development and Environment Section.





Step 7: Acknowledge top performers

Public awards to top performers are an acknowledged way of keeping everyone motivated. All offices should create and adopt a programme and policies which not only encourages more energy efficient practices, but also actually make these positive changes a conscious part of the work ethic.

Awards might be individual or collective. A person who has been particularly good in his or her week in charge of making sure energy is switched off might, for example, be given an afternoon off. The driver on your fleet who consistently covers more mileage for less fuel might similarly get a small award.

Alternatively, you might announce, say, if at the end of the year the ministry or company saves \$1,000, a part of this money might be used to buy something special for the office that everybody wants, or everyone might get a special office treat – a picnic, tickets to a special event or movie, and so on.

Whatever the awards may be, it is important for them to be fairly given and well publicised.

You may want to follow some or all of the steps outlined here. What works for one organisation will not always work for another. It is important however that everyone starts to think seriously about how we can save energy, and to understand that in order to save, we do not always need first to invest.

We hope that by introducing your Change programme you will be so encouraged by the results that you and your staff will become firmly committed to saving energy and the environment.



In conclusion

Good luck with your energy saving efforts to “**save money! save the world**” and contribute to the efforts of Saint Lucia to be “**a nation powering a green future**”.

Foreword by the Minister of Physical Development and the Environment



Honourable Richard Frederick

The Government of Saint Lucia has recently developed a National Energy Policy. It is estimated that 98% of the total energy needs of the island are currently provided by oil-based products and as such, the policy seeks to reduce the country’s dependence on imported fossil fuels on which the electricity and transport sectors rely exclusively.

A key objective of the National Energy Policy is to facilitate the introduction of renewable energy to the national energy mix, thereby achieving greater energy security and sustainability and reducing carbon dioxide emissions which contribute to climate change and global warming. Another important objective of the National Energy Policy is to encourage greater efficiency of energy usage, thus reducing the reliance on imported energy resources.

This energy saving guide has been developed under a project executed by the Sustainable Development and Environment Section of the Ministry of Physical Development and the Environment and supported by funding from the European Union under Special Framework of Assistance-2006. It is intended to support the National Energy Policy developed by the Government of Saint Lucia.

Energy efficiency should be the concern of all citizens of Saint Lucia; everyone can contribute meaningfully to the achievement of greater energy sustainability and arresting climate change by simple changes in behaviour in the workplace, in the home and on the road. This guide includes energy saving tips which can be implemented at little or no cost.

Energy costs in Saint Lucia are significant, but in the short term little can be done to reduce the price. Saint Lucia has no known domestic sources of oil or natural gas, so until its renewable energy sources are exploited, some 98% of Saint Lucia's energy must be imported. These imports come in the form of diesel to generate electricity or to run trucks and heavy equipment; as gasoline for vehicles; as LPG for cooking and so on. The present cost of energy is therefore largely dependent on external forces, over which neither the government nor consumers have any control.

Nonetheless reducing energy costs is an urgent task that can make the difference between success and failure; between profit and loss, between supply and blackouts. It is vital in order to ensure the viability and competitiveness of our businesses, especially as elsewhere, too, companies, administrations and citizens are looking to reduce energy consumption. In so doing, they are also mindful of the need to protect the environment and our world from the threat of global warming.

Since the price of energy cannot be reduced, at least until such time as we can develop our own renewable resources, the only way to reduce costs is to consume less energy. This manual provides some ideas to assist you in doing so.

The guide is intended for offices (including the public administration), hotels and other businesses, which have the potential to reduce their electricity costs by up to 40%. To achieve such a significant reduction would

clearly require some investment (see box). But by making energy-efficient choices and adopting good energy use practices, you can substantially reduce your consumption and your costs, and help protect the environment and reduce global warming, with little effort and at little or no cost.

This guide will help you understand what actions can be taken to reduce energy bills, and also gives you some ideas that might help you introduce a change programme that keeps your staff focussed on the habits you need them to change.

The Sustainable Development and Environment Section of the Ministry of Physical Planning and the Environment is playing a critical role in keeping all Saint Lucians and in particular the public sector, focused on energy savings. This guide will assist, by helping you to make plans, track performance, acknowledge results and share best practices.

When building, think Green!

Typically a minimal up front expenditure in EE/RE of 2% of construction costs allows savings of 10 times the initial investment over the life of the building.



Then, use this opportunity to have a **brief meeting**, planned every month, to discuss the results with your staff. Discuss what was done to meet your targets, or reasons why targets were not met. Discuss suitable remedial actions for the next month. If you believe you haven't met your targets due to technical problems, consider whether you need professional assistance from an energy service company (ESCO) to help you achieve your goals. If you think the problems are more about behaviours, discuss the reasons with the staff concerned.

Focus the meeting on achieving the desired result.

Congratulate your team on good results. Keep encouraging the team to continue their energy saving efforts. If targets are not being met, discuss the reasons with your team. They will have suggestions that could make your programme work better. Let them know you are counting on them to make this work. If targets are met, give praise generously!

Encourage a sense of competitiveness with other teams outside your office. Let your team know where they are versus the others and keep thinking about how to get ahead and stay ahead.

Another advantage of comparing your performance with a similar business is that you may get ideas by asking the other organisation how they are improving their performance.

If you are doing better, let your staff know that too and encourage them to keep focused, so as not to lose your lead.

Some organisations may wish to **report to external stakeholders**, such as shareholders, customers or local residents. This will involve an external communications campaign running alongside the campaign for employees.





Step 6: Announce results

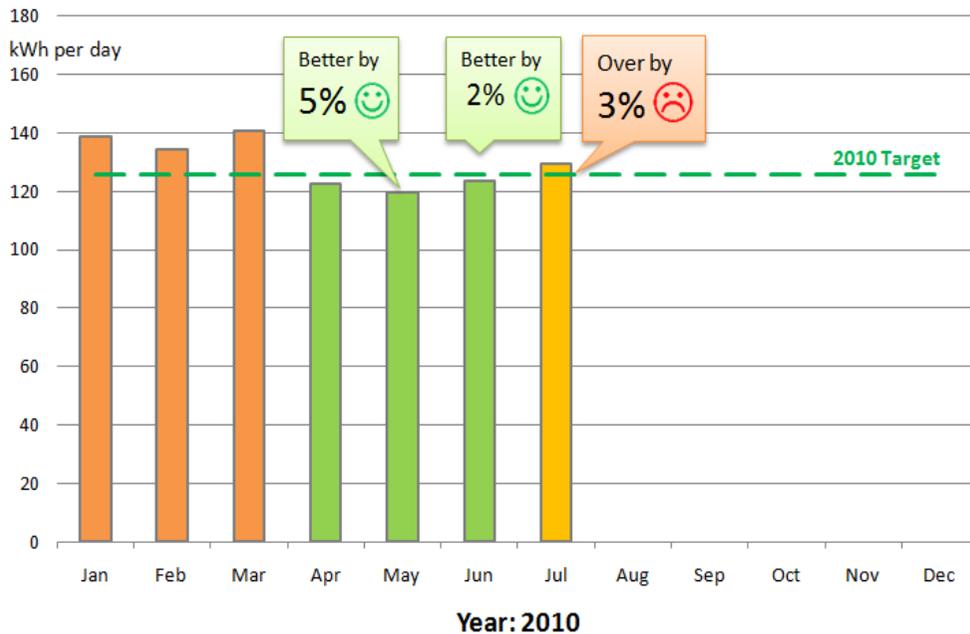
Maintaining interest in and commitment to the campaign in the long term is just as important as launching it effectively. It is important to keep employees updated on progress and also to inform them of the cost savings and environmental impact of the campaign. Unless this is actively managed, the impetus behind energy-saving activities can fade.

As you **measure your monthly results**, you will be aware of whether or not you are meeting targets, so share this with staff. The results should be displayed so that all staff can see how they are doing and how this compares with the targets that have been set.

But don't just do this passively. Make this a ritual and discuss it at regular meetings with your staff. If you are to achieve your targets, you need your staff to function as a team. They need the same regular feedback and pep talks as would a football team.

Each month, **display the results and trends** and compare figures in a friendly manner using colour and other visual indicators such as shown below to make it both clear and eye-catching.

Electricity Consumption, XYZ Section



Section 1: Summary of main tips

Cooling

A review of how you cool your building can make a huge change to your costs. Air conditioning (AC) units account for between 48-65% of electricity consumed in hotels and offices in Saint Lucia. Using these more effectively is critical to reducing your costs. Here are some ideas:

- **Use ceiling fans** in less extreme heat.
- **Use cross-ventilation** by opening doors and windows on breezy days and turn off the AC.

Air conditioning:

- **Adjust the AC thermostat by 1 degree** to noticeably reduce your energy bills, and save up to 5-10% when outside temperatures are extreme. (The recommended air-conditioning setting is 25 degree Celsius for cooling.)
- **Have a technician clean the AC unit** to get best effect, and ensure longer-term efficiency of your cooling equipment. The technician will advise you on how often this needs to be done.
- **Switch off the AC in empty rooms and make sure doors are closed** between areas of different temperatures.
- **Keep doors and windows closed** in air-conditioned areas. Otherwise the cool air (and your money) will be lost.

Fact

AC units account for up to 65% of electricity consumption in offices and hotels in Saint Lucia.

Use them wisely.

- **Use external shading** to reduce the glare of the sun. Remember: once the sun has penetrated the glass the heat is already inside the room!
- **Close shades and blinds when the AC units are in use** in empty rooms, or will be in use later in the day.

Tip!

Here's a little trick for building managers to help get the right setting: adjust the thermostat setting by 1 degree warmer each week, until people in the building start to complain. When complaints start, set it back down by 1 degree.

Lighting

Paying attention to lighting is the easiest way to save energy. Here are some ideas:

- **Turn off lights when leaving a room** and when leaving at the end of the day, to reduce lighting costs by 15%. Lighting an empty office overnight is extremely wasteful. Doing so means you are paying for 300 hours of electricity every month that no one is using.
- **Install timer switches** or light-activated switches on outdoor lighting, so that they are only on when needed. This cuts costs and pollution.

Fact

Leaving lights on in an office overnight means you are paying for 300 hours of electricity every month that no one is using.

In most building, lighting is the second most energy intensive end-usage after AC. In commercial buildings, lighting represents on average 22% of the electricity bills, and in hotel about 15%.

Case Study

Benefits of replacing incandescent bulbs (IC) by Compact Fluorescent Lamps (CFLs):

A home with 7 x 60 Watt IC used for 5 hours a day will consume about 767 kWh a year. Based on mid-2010 prices, this will add up to EC\$ 593 per year for lighting.

To replace these by 7 x 10-Watt CFL bulbs, at a price of EC\$ 12 will cost you EC\$84.

However, the new bulbs will consume about 128 kWh/year, 83% less than the consumption of the older bulbs, saving you about EC\$ 500 a year!

- **Invest in good quality energy-saving light bulbs.** These cost more but can last up to ten times as long as ordinary bulbs and consume approximately one quarter of the energy of traditional (incandescent) light bulbs. Incandescent bulbs also produce far more heat which makes extra work for AC units, causing them to use more energy.
- **Keep lamps and fittings clean** to ensure better effect.
- **Optimise your use of daylight.** Perhaps your workspace can be

organised to make better use of natural light? If the glare is too bright and you have horizontal blinds, use them to direct sunlight onto the ceiling. This will admit the natural light while reducing glare and helping to prevent the room from overheating on warm or sunny days.

- **Use task lighting** to illuminate just the working area to a high level, instead of the whole room. This can also provide a more comfortable working environment by, for instance, reducing glare on computer screens. Task lighting can also help to minimise lighting costs if lower-level background lighting is provided for the areas where less light is needed.

Tip!

See a problem? Report it

For example: a flickering light uses electricity just to irritate you and your colleagues; dirty light fittings do not only look unpleasant but they also reduce the amount of light over time and can make the place feel dingy.



Step 5: Clarify responsibilities

Rather than making everyone responsible for switching the lights off (and then everyone leaves it up to someone else), you might consider a plan that makes different people responsible for energy efficiency in their room or sector, each week. Then, you must monitor that the plan is working.

Consider developing a set of incentives that discourage failure. If people don't pull their weight, what will be the consequence? It might be effective to use incentives and disincentives that all can share – set it up so that the forgetful staff member won't want to let down the entire team!

Making staff responsible: A real life example:

A mayor in one successful municipality in Europe instructed his security guards when doing their rounds of the building to check that all lights had been switched off when people went home.

If any lights or appliances had been left on, he also instructed them to call the person responsible for switching off to ask them to come in and do so.

Being dragged out of their beds in the middle of the night to come into the office proved a very effective memory jogger.

Overcome resistance. Changing the habits of a lifetime is not easy. It is important, however, to get everyone on board. Trying to force people to change their habits rarely works, and will usually cause greater opposition. Instead, work out what is the problem and make a point of demonstrating the benefits of change.

Ideas to overcome resistance:

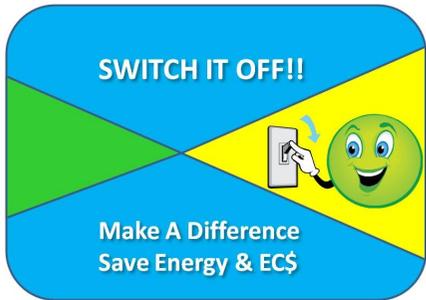
- Offer training in simple energy management, including practical habits that individuals can adopt, could be a solution.
- Foster staff co-operation by organising inter-departmental competitions with prizes for the winning team.



Step 4: Remind

Although many people start with good intentions, they quickly slip into old ways. So incorporate reminders as part of the change programme. For example:

- Have an email automatically sent out at the end of each day, reminding staff to switch off before going home, or check rooms or equipment for which they are responsible.



- Put posters up where they can remind people (including guests, clients, visitors) what you expect them to do when leaving the room.
- In offices, consider putting up a post-it note right next to light switches with a message written in felt pen – “Switch Me Off when Leaving!”
- In offices, consider sending regular e-mails to staff to remind them of the energy-efficiency policy and what is expected from them.

Since notes can be forgotten too, consider using incentives/rewards, as discussed on page 21.

Another way to remind people that energy conservation is a long-term process is to publicise the performances.

Spreading good news is important because it encourages people who have contributed towards the success and lets stakeholders know their interests are being met.

Tip!

Why not have a contest in your office to see who can come up with the best energy-saving scheme?



Phantom power

Phantom power is the term used to describe power that's going to waste even when appliances are switched off and we assume no electricity is being used. Any plugged-in appliance that uses a remote control to turn it on is a source of phantom power. Such appliances, if left plugged in, still use some electricity when switched off, because they are in 'standby' mode. Here are some things to look out for:

- **Turn off all electrical equipment overnight** including computers, monitors, photocopiers and printers. Switching off inactive equipment also helps you to stay cool by reducing the amount of heat they produce, making the office more comfortable for everyone.
- **Use stand-by mode during the day.** If it is impractical to turn off appliances during the day, at least put them into stand-by mode. Computers, photocopiers, printers and fax machines use 50% less energy in stand-by mode, than when they are left on. Check with your IT people about how to make sure all computers and printers that

have standby, sleep or energy saving modes are set to switch to the saving mode automatically after, say, 30 minutes of inactivity. Remember, at the end of the day they should be switched off entirely to maximise the energy savings.

- **Put your laptop AC adapter on a power strip** that can be turned off (or turns off automatically); the transformer in the AC adapter draws power continuously, even when the laptop is not plugged into the adapter.
- **Screensavers are not energy savers.** People usually believe that screensavers save energy! But the truth is that screensavers prevent the last image “burning” onto your screen - and

Tip!

Unplug your mobile phone when it is fully charged and remove the charger from the plug because even if nothing is connected to it, the charger still consumes 10% of the electricity required to charge the mobile phone.

complicated screensavers can actually use more energy! Setting your computer to automatically switch to sleep mode, or manually turning monitors off is always a better energy-saving strategy.

- **Unplug transformers that are not being used.** Step-down transformers (which convert 230 Volts to 110 Volts) use energy once they are plugged in, even if nothing is connected to the transformer.

Facts

When you leave your mobile phone plugged into the charger even after it is fully charged, it still consumes 60% of the electricity required to charge it.

A photocopier left on standby overnight wastes enough energy to make 30 cups of tea.

A desktop computer left on sleep mode overnight wastes enough energy to laser print 140 letter sized pages.

Other easy ways to save energy

- **Pay attention to energy efficiency labels.** A lot of energy wastage comes from older and inefficient equipment. When it comes to budgeting for new office items, consider investing in ones that are better for the environment. This can be as small as purchasing a kettle that uses less power than your old one (check the power consumption in Watts on the bottom, and choose one with a lower number), or printers that print on both sides of the paper.
- **Encourage your office manager to reduce operating costs** by replacing old equipment with modern, energy efficient appliances.
- **Fix water leaks.** A dripping water tap wastes both water and energy. A hot water drip is likely to consume as much as 15 litres per day, or 5,500 litres per year. That not only wastes a scarce resource and increases water bills, but also increases the electric bill for heating the water.
- **Use solar heaters to heat water.** If this is not possible, use an efficient water boiler and set the water thermostat at 60°C for a comfortable temperature and lower bills.
- **When boiling water, boil just the amount required.** Don't boil a full kettle if you need only one cup of coffee: if one employee boils water for 2 cups of coffee instead of the one desired it will waste about EC\$23 per year. If there are 20 people in the building doing the same thing, that's almost EC\$500 a year being lost!

Fact

A commercial size chiller door left open for 30 minutes a day wastes enough energy in a year to supply the electricity needs of an average Saint Lucian household for 17 days.

- **Buy the right size appliance.** As a general principle, when buying appliances, do not buy a bigger size than you need since it only encourages a waste of energy.
- **Encourage staff to step up.** Let staff know you will appreciate it if they take initiatives to gain greater control of the environment you all work in. Savings from energy efficiency could make a big difference to your company. Explain this to them.

Tip!

'A-rated' energy efficient appliances are much cheaper to operate than those with lower ratings.

For example, an 'A'-rated washing machine will save 30% of the energy used by a 'C'-rated one - under the EU energy labelling scheme.

The optimal hot water temperature is 60°C- not more, not less!

At lower temperatures the risk of *Legionella* increases; but at higher temperatures you are wasting energy!



Ensuring sustainability

The following steps indicate how to ensure the sustainability of the energy programme, and how to continually improve your action plan. To check if your programme is effective, go back regularly to Step 1.

Step 3: Enforce

...and lead by example! It's up to office managers and employers to bring green attitudes to the workplace, so always make sure you lead by example.

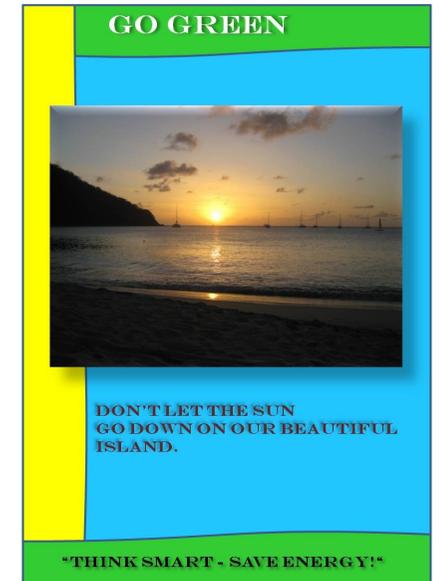
Give direct instructions. Staff also need to know what is expected of them. So, work out what different staff members should take responsibility for, and inform them of these responsibilities. You can do that via:

- A personalised letter / e-mail
- Stickers:



- Direct display of messages and instruction on monitors, TV, etc.

- Poster



Ensure that instructions are clear:

- Switch off all ACs when leaving rooms that are going to be empty for longer than an hour or two — and always when going home at night.
- Always close all doors and windows in rooms where the AC is on.
- Turn off all IT equipment before going home. For example make someone in the office responsible for switching off equipment each week.
- When leaving for lunch or meetings, switch off office lights if possible.
- Don't switch on appliances unless you are ready to start using them.
- Get into the habit of switching off your PC monitor over lunch and any other time when not in use.



Step 2: Going further - Compare results

Public sector: we would recommend that you compare your energy performance with those of other public agencies; this may give you a better sense of how well you are performing.

- SDE may assist the Ministries to set energy conservation targets.
- SDE will set up a system to collect, compile and compare the energy consumption data for the various ministries on a monthly basis.
- The results will be sent to the various ministries.
- The results will show the performance of each ministry in comparison with the others, and over time.
- The results will indicate if each ministry has achieved their energy saving targets and will indicate the relative performance of each ministry in comparison with the others.
- This will allow each Ministry to compare its performance to others.
- This will meet one of the objectives stated in the NEP (paragraph 59):

“Energy consumption in existing Government Buildings will be monitored with a focus on monitoring electricity consumption for air conditioning and lighting.... The results will be made public to allow for the transfer of best practices and knowledge to other building sub-sectors.”



Private sector: Businesses can compare their energy use using the example outlined in the proceeding section under public sector , with a few modifications. For example, the performance indicator for hotels will be electricity consumption per guest-night, rather than electricity consumption per unit of floor area. A manufacturing industry company may want to track energy consumption per unit of product, and so on.

Whatever the specific method that you use, you should be doing the following six things:

1. Set performance indicator(s) that make sense for your organisation and business.
2. Record your consumption on a spreadsheet and a graph/chart.
3. Update your spreadsheet each month to track and monitor your consumption over time.
4. Set goals to reduce your consumption.
5. Publicise your results within your organisation.
6. Compare your progress with that of other companies in your industry. Ask your industry association to collect the energy consumption data of similar businesses, just like SDE is doing for the public sector.

For households there's already a free online tool called Welectricity which allows users to track and reduce electricity consumption at home. It works like a social network - users will sign up on the website, set up their household profiles, invite and interact with friends on a simple messaging interface. Users enter their electricity consumption which is displayed graphically and can be compared with the consumption graphs of similar users. You can sign up to use this free energy-saving tool at www.welectricity.com



Transportation: Be efficient!

Transportation accounts for more than half of the total energy consumed in Saint Lucia. This presents a large opportunity for savings.

There is a growing trend in Saint Lucia for larger and older cars. Such cars tend to be heavy consumers of fuel. When replacing a car, it is well worth calculating not only the purchase price of a car, but also how much more expensive it will be to run than a newer, more efficient model. However, even with your current model, there are a number of ways you can cut your motoring costs significantly by reducing your fuel consumption and simultaneously extending the life of your vehicle due to less wear and tear.

Train your drivers to drive efficiently. The difference in consumption between trained and non-trained drivers in terms of fuel consumption can be anywhere from 10-40 % less for the trained drivers. Typical reasons include:

- **Aggressive driving** (speeding, rapid acceleration and braking) which wastes fuel. It can lower your fuel mileage by 33% at highway speeds and by 5% around town. So drivers should be encouraged to avoid sudden bursts of speed, tailgating and pumping the accelerator pedal. Gradual starts and stops result in less fuel use and less wear and tear.
- **Driving in low gear.** Driving smoothly in higher gears is more efficient. So to save fuel, change to a higher gear before your counter hits 2,500 rpm in a petrol car, or 2,000 rpm in a diesel model.

Fact

Transportation accounts for 65% of the energy used by the people of Saint Lucia. With more efficient use, the energy consumption in Saint Lucia could be cut by 25%. Some of this saving could be achieved simply by changing driving habits.

- **Driving too fast.** While each vehicle reaches its optimal fuel economy at a different speed (or range of speeds), fuel mileage usually decreases rapidly at speeds above 90 kph.
- **Not checking the tyres.** Driving around on soft tyres greatly increases both fuel consumption and tyre wear, so you should ensure that tyre pressures are kept at the stated level.
- **Using the AC unnecessarily.** The AC uses considerable amounts of fuel. At lower speeds and temperatures, it is more efficient to drive with the windows down.

Tip!

Tyres and wheels are crucial elements having an influence on safety and fuel consumption.

What you need to check regularly:

- Tyre pressures
- Alignment of wheels
- Lateral swerving
- Unusual apparent defects (on the wheels)



Keeping the car engine running when stationary. Make sure your drivers know to switch off if the car will be idling for more than a few minutes. And remember, cars with larger engines typically waste more fuel when idling than cars with smaller engines.

Get an efficient car. Smaller, newer cars can save you a lot. Bear in mind that larger engines typically waste more fuel, especially if these are older cars which have generally been built to lower energy efficiency standards and have quite possibly not been properly maintained. When buying a new car, make fuel efficiency a priority.



Keep it properly maintained and serviced. A properly tuned car will use less fuel and potentially save 2% to 12% of average consumption. Regular servicing also prevents engine failures and over-consumption. A few top tips on car maintenance include:

- Follow manufacturer instructions and recommendations.
- Check and adjust spark plugs, ignition wires, PCV valves.
- Clean air and oil filters.
- Check oil and water levels — simple checks that drivers can do themselves.
- Clean the fuel tank regularly.

Check out abnormalities: unusual noises, vibrations, lateral swerving should be checked immediately.

Tips!

Check your average fuel consumption regularly as follows:

1. Fill the tank and note the mileage on the odometer (or set it to zero).
2. After driving till the tank is nearly empty, fill up again and note the new mileage and also the number of gallons used to fill up this time.
3. Subtract the old mileage from the new mileage. This gives you the miles driven.
4. Divide the miles driven by the number of gallons used to fill up the second time.

This gives you an estimate of your vehicle's fuel consumption in miles per gallon.



Stage 1.3: Set targets

Set targets for energy reduction in areas of excessive consumption. Targets should be realistic and achievable. Many businesses can achieve greater than 10% reductions in their energy use - from behavioural change measures only.

Set a target below the average for the previous year. You can simply try to reduce and keep your consumption to below the average for the previous year. Later on, you can be more specific, by setting precise percentage reduction targets.

Do not under-estimate the potential of behavioural change! It is always better to set yourself a target that is challenging, as this increases your chances of achieving any improvement at all – so consider a reduction target of at least 10% to start.

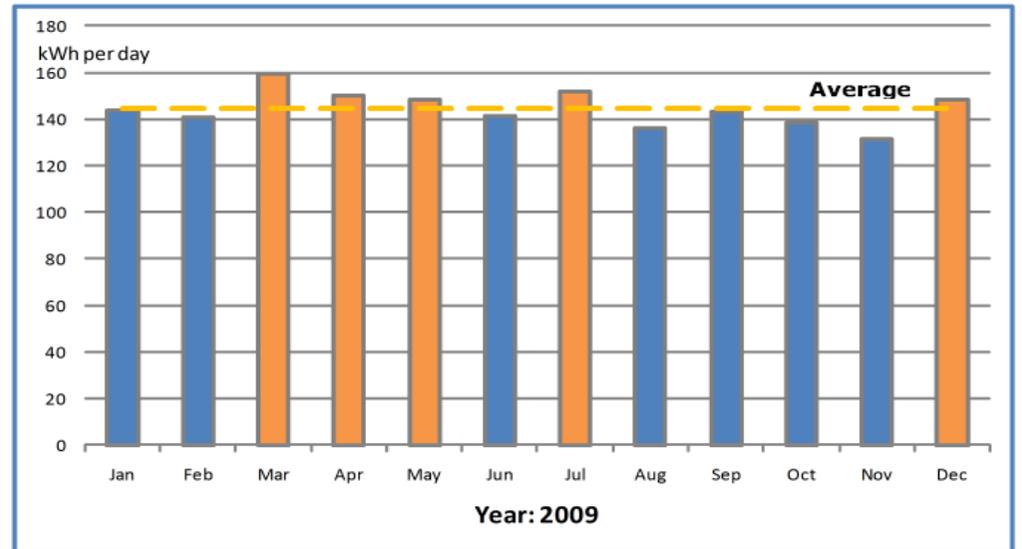
Make a commitment when you have set your collective target. Write it on a sheet of paper and stick it up on the notice board where people can see it every day.

Keep a copy to remind yourself. Then review the ideas set out in this guide to find specific ways to reduce your consumption. When the next bill arrives, put the latest numbers in to see how you have done – and keep setting those reduction targets!

Stage 1.4: Analyse the data

After few months of data collection and energy consumption monitoring you will be able to see if your performance is matching your expectations. You should compare your energy performance before and after having set a target and implemented your action plan.

Electricity Consumption, XYZ Section





ELECTRICITY MONITORING SPREADSHEET

Enter Building Area >		square feet, or	square meters				
(1)	(2)	(3)	(4)			(5)	
Current Month	Service Period		Days in Period	Usage kWh	Average Daily Consumption		Fuel Surcharge Cost Adjustment, \$
	From	To			kWh/day	kWh/day/sf	
January							
February							
March							
April							
May							
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September							
October							
November							
December							
				0			

Stage 1.2: Monitor your consumption

To monitor your energy consumption, set up the spreadsheet to do the following calculations:

1. Subtract item 2) from item 3). This gives the number of days in the period;
2. Divide item 4) by the number of days. (This gives the average daily consumption for the current billing month 1);
3. Divide this value by the area of your building. This gives you the average daily consumption per unit of area for the current billing month in kWh/day /m² or kWh/day / ft²;
4. To convert your results in kWh/day /ft² to results in kWh/day/m², just multiply by 10.764. To do the reverse, divide by 10.764.

To help you establish a baseline, set up two spreadsheets – one for the previous year and the other for the current year. Set up each spreadsheet to draw a graph of the average daily consumption (kWh/day) for each month, such as **the bar chart on Page 14**.

Highlight the above average months in orange or red, to see at a glance if there are any patterns over time, for example which months might be your recurring high-usage months, or which months need special attention.

Also set up a graph of the kWh per day per sq foot (or square meter), which you will use if you are comparing your building to others.

The person responsible for managing energy will usually oversee the collection and analysis of energy data.



Use renewable sources

This section is about ways other than behaviour that you can use to reduce your energy consumption – and your costs – by investing wisely.

Photovoltaic (PV) systems

Given the price of electricity in Saint Lucia, this renewable energy technology makes financial sense, even if the capital cost is still high: approximately 11,745 EC\$ to 13,050 per kWp.

Depending on how much energy prices rise, the payback period for a PV system connected to the grid in Saint Lucia is in the range of 7 to 10 years.

In Saint Lucia, a typical PV system will produce between 1,600 and 1,900 kWh/year per kWp installed, making it viable even if the installation costs represent a significant barrier for most residents and commercial businesses.

Tip!

To work out how much you can save, calculate the simple payback period.

You can calculate the simple payback period of an energy efficiency investment by dividing the investment cost by the annual savings. This tells you roughly how long it will take you to recover your original investment.

Solar water heating

For most businesses that need hot water, investing in solar water heating (SWH) is a guaranteed way to save money and energy while getting the energy service that you and your customers need. In Saint Lucia, SWH systems produce on average 1,150 kWh/year of hot water per m² of solar collector, saving approximately 1,280 kWh of electricity annually. The payback period of the SWH is less than 3 years. This renewable energy option is very cost-effective.

Example

A 50-gallon solar hot water tank:

- Costs about EC\$ 4,000
- Saves about 2,050 kWh of electricity per year
- Saves equivalent to EC\$ 1,850 on your electricity bill!
- Has a payback period of 26 months

Section 2: Implementation of an energy-efficiency programme

How to introduce a change programme?

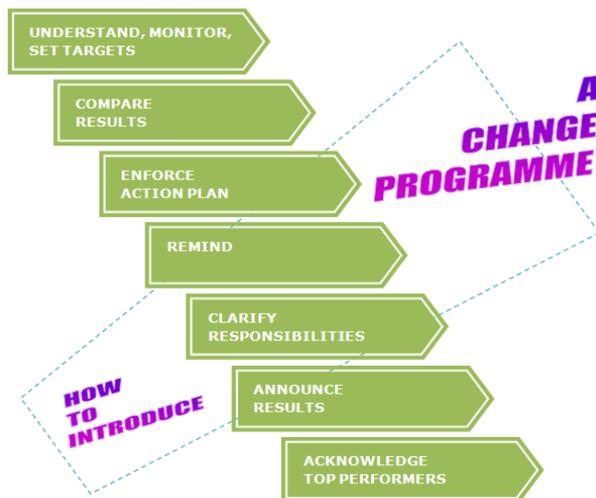
You know what should be done. But how do you get staff on board? This section considers some ideas to help you put a programme in place:

- **Create a compelling message.** Successful projects start with a compelling message. Consider something aspirational like 'Saving Energy Will Help Save Our Island'.
- **Stay focused.** The good news is that it can be relatively easy to enthuse your staff, the bad news is that it is harder to keep them motivated. Use the tips here to remind, communicate success, acknowledge, and generally help keep them on board after initial enthusiasm wanes.

- **Create champions.** Do not expect to do it alone. Above all, it will be important to involve those to whom others listen. Do not assume that it is the senior managers. Find and motivate your champions.
- **Involve your team in designing action plans.** Once you have the team, agree with them the areas and actions where you believe you can make the biggest savings fastest. Once everyone is comfortable with the first measures that have been introduced, you can come back to them to agree what else can be done.
- **Appoint an energy manager.** Make one person responsible for this project and for introducing the 7 steps set out in this section:

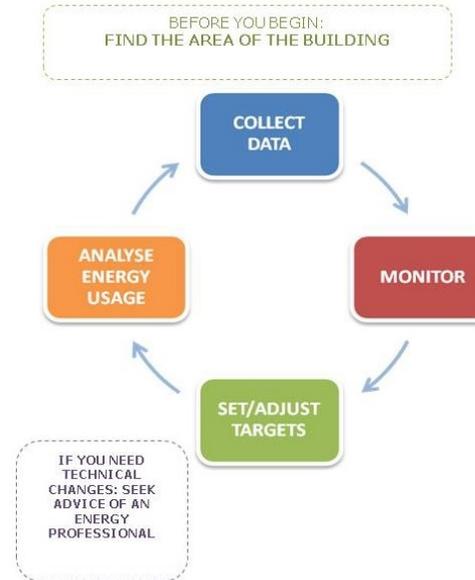
Before you begin:

Appoint an energy manager. Giving someone the responsibility to see that targets and schedules are met and everyone on the team is playing their part will give the campaign a good chance of success.



Step 1: Understand, monitor, set targets

Stage 1.0: Before you begin:



2. Record the following information from the bill for each month:

- The Current Month
- Service Period: From
- Service Period: To
- Usage (kWh)
- Fuel Surcharge Cost Adjustment

Here's an example of a spreadsheet you can use to monitor your energy consumption.

Tip!

Monitoring your energy use will allow you to:

- Establish existing patterns, and help identify where energy is being wasted
- Highlight the best energy saving opportunities and allow better planning and goal-setting
- Know if your targets are being achieved, and
- Help you compare your organisation's energy use with that of others

The first number you need is the area of the building you are occupying in square feet or square meters. This will allow you to determine energy consumption per unit of area, and therefore will allow comparisons between your building and others.

Stage 1.1: Collect data

Before you can reduce your energy use, you need to know how much you are using. Here's one simple way to track this.

1. For each year, record your monthly electricity use on a spreadsheet