



# Sustainability Plan Woodstock, CT

Created by Clark University's M.B.A. Class: Greening the Corporation

Victoria Clarke  
Aris Hartanto  
Laurel Holden  
Helen Le  
Frances Lu

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## **Introduction**

Sustainability is an issue that is becoming more prominent in today's society and the news. However, when many people are asked the question, "*what is sustainability?*" the majority do not have an answer. If sustainability is on the forefront of discussion in the wake of rising oil prices, natural disasters and foreign wars, it is important to know what it is. If we do not know what sustainability is, and more importantly *how* to be sustainable, then we can never *be* sustainable.

So, what is sustainability?

Simply put, it is our ability to endure in the long term. Our planet has a finite amount of resources, which we are using at a rapid pace. It also has a finite lifespan and a delicate ecosystem that is damaged by the actions of man. Sustainability is the practice of limiting our reliance on finite resources by finding cleaner, healthier alternatives that minimize our impact on the planet. Instead of using coal, we use wind energy. Instead of driving our car to work every day, we choose to telecommute to minimize the amount of emissions we produce.

There are many ways to be sustainable; a lot of them are easy and cost nothing. A business can save thousands of dollars on its electricity bill and be greener by switching off its office lights and computers every night. A homeowner can save money the same way. Sustainability often walks hand in hand with being frugal. Yet, if it was that easy to be sustainable and save money, why are not more people doing it?

Mostly, businesses and individuals are ignorant of the impact that we are having on the environment. More importantly, when informed, neither knows where to begin about how to change. Concepts like switching off the lights or double-sided printing are deceptively simple, and while they may seem like common practices, they are easy to forget and habits can be hard to change. Finding ways to raise awareness about sustainable practices and making this knowledge stick is a key to making sustainability a part of our daily life.

Ultimately, sustainability is created through behavior change. Members of a community have to be committed to changing their own habits, whether it is through recycling, water conservation, or limiting their energy usage. Communities consist of residents and the businesses that operate and serve within the community itself. Both residents and businesses need to commit to change, and it is through this commitment that sustainability is achieved and maintained.

The following sustainability plan is tailored for the town of Woodstock, Connecticut. With careful examination of the town's current and future goals, Clark University's Graduate School of Management has designed a series of initiatives that will raise awareness about sustainable practices that Woodstock's businesses and residents can implement. Through the empowerment of the community by its leaders, Woodstock will be able to execute these recommended initiatives and serve as a model for other New England towns.

## **Initiative Introduction**

In order to address the environmental issues at Woodstock, we propose several initiatives to the Green Team and the community at large. Initiatives are goals for the community, and they help identify and focus on a problem and break it into manageable components.

### **Criteria for Proposed Initiatives**<sup>1</sup>

All initiatives proposed for Woodstock were selected based on these following set of criteria:

- ***Familiar:*** they are new/existing ideas that have been modified to bring better results.
- ***Applicable to Woodstock:*** Woodstock was well researched in terms of its population, socio-economic status, geographic features and resource allocation. The initiatives have to make sense to the people and businesses residing within the community. If not, then the initiative will not be feasible for Woodstock to implement and sustain.
- ***Easy to implement:*** hesitancy to change can be challenging for any initiative. Benefits may be explained, but if an initiative is difficult to implement, it will take longer for people to become engaged and participate. In order to achieve short-term wins and gain initial support, initiatives have been created with short-term components to help create momentum and bolster morale
- ***Viable in the long term:*** these initiatives are not short-term fixes for long-term problems.
- ***Habit changing:*** “The definition of insanity is doing the same thing over and over again, and expecting the different result,” said Albert Einstein. We apply this quotation to initiatives: individuals cannot act the same over and over again and expect different results. Changes have to be made for new and better results to occur. These initiatives work to change old procedures.
- ***Giving everyone the same goals:*** everyone on the Green Team and in the Community will have the same goals to attain, and make everyone feel engaged and focused.
- ***Measurable:*** in order to see if the initiatives are successful, they have to be measurable in some way. This is essential, since performance measurements determine the next set of actions for each initiative. We have provided some simple parameters by which initiatives can be measured, such as number of sign-ups to renewable energy, or number of homes that buy CFL light bulbs etc.

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<sup>1</sup> Ways to develop your initiatives : <http://www.slideshare.net/licoreis/ways-to-develop-your-initiative>

## **Initiative Marketing**

Creating awareness in a community is challenging, since generally people are resistant to change. The reasons that people refuse to change are generally:

1. People do not know the benefits of the change,
2. People do not understand the change, and
3. People do not know *how* to change.

To tackle these issues, the Green Team must *communicate effectively*.

### **The Basic concept of Effective Communication<sup>2</sup>**

#### **Definition:**

Communication is defined as the exchange of thoughts, messages, ideas or other information by speech, signals, writing or behaviors. People use communication as their primary means to obtain or exchange the information. However, sometimes when communication is misunderstood or not delivered appropriately it will distract from the information itself. Therefore, eliminating misunderstanding is a key in effective communication.

#### **Communication Process**

Delivering messages can be done in either a non-verbal or verbal message. To check whether the message is effective or not, feedback is required. Understanding the communication process is the foundation on which improvements in the message can be made.

#### **Elements to sending a message:<sup>3</sup>**

- ✓ Formulate the message you intend to communicate
- ✓ Consider possible internal and external barriers that may affect the message
- ✓ Transmit the message clearly and consistently

As of June 2010, only 4% of Woodstock's residents have joined any renewable energy program. We can conclude that the right message has not reached Woodstock's citizens and businesses. To correct this issue, the most important thing to do is to make sure citizens and businesses actually *hear* the message and understand it. If they do not have access to the message, then they will never participate in any of the programs. Effective communication of the message should be accomplished by the Green Team by implementation of the Marketing Plan provided.

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<sup>2</sup> Effective communication : <http://trainingpd.suite101.com/article.cfm/effective-communication>

<sup>3</sup> <http://trainingpd.suite101.com/article.cfm/effective-communication>

## **Marketing Plan Goal:**

To effectively communicate to the Woodstock community the ideas and the necessary actions to be taken, we classify the Marketing Plan into two targeted markets: internal (The Green Team) and external (the larger community of Woodstock).

## **Internal Marketing Plan: The Green Team**

It is critically important for members of the Green Team to prepare themselves for the sustainability initiatives. Actions must be well thought out and consistent with the Green Team's goals.

### **This includes:**

- The Green Team creating their plans and schedules for implementing the following initiatives.
- The Green Team recruiting more members of the community onto the team. One of the obstacles in delivering messages to the town of Woodstock is the fact that the Green Team has only a small amount of people. Having more members increases the amount of voice, presence, reach and impact that the team has in the community.
- The Green Team should coordinate with the Town Administrator and Selectmen and other institutions such as schools to get more support.
- The Green Team should coordinate with the local businesses to support the proposed programs, especially if local businesses are being considered as key suppliers of initiative materials, such as light bulbs or ice cream.

## **External Marketing Plan: The Community**

Here, we emphasize about how to deliver the messages within each of the following initiatives into the proposed target market. Based on our research and discussion with Jim Stratos (The Green Team), we recommend that the delivered messages to Woodstock's residents and businesses emphasize the financial benefits of the initiatives. Practical messages such as, "how money can be saved," and "why pay more on bills when you don't have to," are more effective than, "save the environment."

### **This includes:**

- Intensifying the existing marketing media. This includes increasing the frequency of advertisement in local newspapers and the town website. The content of the message is very important to getting a strong first impression.
- Providing "active communication" with the target market segments through avenues such as local radio talk shows in local radio such as WINY Radio-Putnam, WTIC Radio-Hartford or WHUS Radio-Storrs or in local television such as WTIC-TV-Hartford or WUVN TV-Hartford.<sup>4</sup> As residents appear to lack information about programs such as renewable energy, these channels of

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<sup>4</sup> <http://www.city-data.com/city/Woodstock-Connecticut.html>

communication may be a fast way to spread the news. These types of programs also allow citizens to directly ask the Green Team questions and receive responses immediately. Inviting residents who have already converted to renewable energy may be an excellent way to demonstrate the benefits of the programs.

- Addition of a sustainability tab on the town website ([www.woodstockctgreenteam](http://www.woodstockctgreenteam)). One function available under the Sustainability tab would be to enable visitors to do their renewable energy sign-ups online.
- Conducting particular events that intend to “gather people” and use the event to get “new customers.” We propose the “ice cream events” to get residents’ attention and encourage them to attend. At these popular events, attendees can be introduced and educated to the various programs available in Woodstock and be persuaded to sign up.
- Changing the way the message reaches Woodstock’s businesses and residents. Since the people of Woodstock are scattered, door-to-door marketing could be very effective, even though it is time consuming.

## **Sustainability Initiative: Residential Renewable Energy**

**Goal:** Converting to renewable energy sources is a high priority for any town that wishes to become sustainable. However, the conversion process can be difficult if 1) residents and business are unaware that opportunities to switch to renewable energy, and 2) if there is no obvious incentive for them to switch once they know. The focus for this initiative: increasing awareness and making the switch palatable.

### **Benefits**

*Environmentally*, using fossil fuels such as coal and oil to make electricity poses great risk. Fossil fuels pollute the air and water, hurting plant and animal life and creating toxic wastes. For example, acid rain is a direct cause of burning coal, which makes lakes too acidic for plant and animal life to grow. Everyone knows that clean air and water are essential for good health and longevity. Yet studies done by Harvard Medical School and the American Cancer Society have shown that air pollution is a direct cause of 64,000 deaths each year from heart and lung disease. To put that figure into perspective, air pollution assists in more deaths per year than *car accidents*. Renewable energy avoids unnecessary emissions and pollution, and protects the limited fossil fuel resources for future use.

*Economically*, using renewable energy is not simply a safer solution, but also a fiscally sound one. Already, the United States has become dependent on foreign oil and has moved a large portion of its wealth overseas into buying this commodity. Renewable energy sources such as solar, hydropower and wind power not only reduce pollution, but they keep cash within a region and add a stable source of energy to the grid. When fossil fuels eventually run out, those using renewable energy sources will not feel the impact.

Consider also that renewable energy sources are not dependant on fuel markets, thus they are not subject to the price fluctuations caused by supply and demand. They are also not interrupted by foreign supply and demand, since these fuel sources are local. Instead of having an electricity bill that varies from month to month based on the market's effect on the grid, the electricity bill of a home using renewable energy will never fluctuate as much (think of it: as fossil fuels become scarce, energy prices will soar). In the long term, homes that have switched to renewable energy and paid more up front will pay less, by cutting down on the variability of price and by reducing their energy costs..

As we said before, the struggle is not in convincing people to convert, but rather in finding them, making sure the message is heard, and providing an easy way for them to convert to renewable energy sources. While we would like to see the entirety of Woodstock's residents and businesses convert to renewable energy, we know that we first have to reach them.



## **Residential Renewable Energy**

**The Premise:** The Connecticut Clean Energy Fund (CCEF) has raised a challenge to communities within Connecticut: convert to clean energy and receive free energy. With the help of clean energy providers Sterling Planet and Community Energy, for each home that converts to a renewable energy (either hydro or wind), the town receives 1 “point.” For every 100 points, Woodstock receives 1 kW of FREE energy. As more of the town commits to cleaner energy, the more energy the town is provided free of charge.

**Objective:** To increase long-term awareness about the benefits of renewable energy, as well as the types of renewable energy providers that are available for Woodstock’s residents. Working through the Connecticut Clean Energy Fund, the target goal is to have 30 sign-ups to a renewable energy provider (either Sterling Planet or Community Energy within a month of the initial advertisement program. Within five months, the awareness campaign should have matured and we expect to have over 100 sign-ups.

**Approach:** Our plan is facilitate the sign-up to a renewable energy source by bringing the means to the people. Instead of having residents seek out the Green Team and find out how to convert, the Green Team will go to them. By working in conjunction with local businesses, the Green Team will be able to successfully create and carry out events that will guarantee sign-ups.

There are four courses of action by which we suggest that Woodstock and its Green Team should create awareness and generate sign-ups for the available renewable energy sources. Specifically, the Green Team should concentrate its efforts in gathering sign-ups via four “focus” areas. The four are chosen for the size of their impacts on Woodstock’s community.

- 1) New Roxbury Village Senior Citizen Sign-Ups
- 2) Sweet Evalin’s Ice Cream Shop Tabling
- 3) Merchant Association Discount
- 4) Supermarket and Drugstore Tabling

We follow a very simple strategy: go to the source, promote, inform, and convert.

*New Roxbury Village Senior Citizen Sign-Ups:* Woodstock's senior center, New Roxbury Village, is an excellent source of potential sign-ups, not only in the form of New Roxbury Village itself, but also in the form of the senior citizens who live there and their visiting families.

**Plan of Attack:** Getting sign-ups at New Roxbury Village is a matter of preemptive planning. First, contact has to be made with the Woodstock Housing Authority and New Roxbury Village's coordinator to see if a relationship can be established. Once this has been done, the real work can begin.

The renewable energy offered by Sterling Planet and Community Energy, as well as the switch to Starion Energy as an energy provider, costs less than the current contracts that many have with Connecticut Light and Power. New Roxbury Village's only source of income comes from its tenants; it does not get help from the town of Woodstock or the state of Connecticut. Even though it only has an account with Connecticut Light and Power for common areas such as their community rooms, garage, and streetlights, it may be cheaper for them in the end to convert. Being energy efficient and saving money is surely a priority of the facility, which works in the Green Team's favor since this desire can be leveraged against what the Green Team is currently offering: cheaper and cleaner energy alternatives.

To keep costs of New Roxbury Village low, as well as to promote the renewable energy program, the Green Team can work with the Housing Authority to see if a switch to Starion Energy and renewable energy is possible. If it is, this switch should be done with much alacrity. Announcements about conversions and the amount of money New Roxbury Village stands to save should be made public. Notices that declare, "We are a renewable energy facility," as well as a way to sign up should be placed around New Roxbury Village.

As the discussion and investigation of energy costs and feasibility of switching occurs, the Green Team should investigate the possibility of holding an on-site set of classes about saving electricity and the benefits of renewable energy, with the options to allow current New Roxbury Villagers to switch to Starion Energy and receive renewable energy. Those who live at New Roxbury Village pay their own rent and utilities to Connecticut Light and Power. If it is made clear to them that switching providers and converting is cheaper, then it is almost guaranteed that they will do so.

One of the most important things to consider about the prospect of utilizing New Roxbury Village as a source of sign-ups is not necessarily from the seniors living there, but from the families that attend. The hope is that those living there, seeing the cost benefits of the conversion, will mention it to their visiting families and spark their interest in converting too.

*Sweet Evalin's Ice Cream Shop Tabling:* Sweet Evalin's is a popular spot during the summer for most Woodstock residents. Many different families stop and have a cool treat here. Sweet Evalin's is an intersection in the Woodstock community, a daily staple, and is therefore a perfect location to find and convert residents.

**Plan of Attack:** Everybody loves free things! And it's true, who *doesn't* love free ice cream? The idea is simple: with the shop's blessing, for every resident who brings all the necessary materials that would make it possible for them to convert to clean renewable energy they get a free ice cream for them and their family. At the same time, the Green Team is tabling at the ice cream shop and is promoting renewable energy sign-ups.

The trick is making conversion simple and straightforward. It is easiest when it is done online. By having the Green Team table with laptops open to the necessary websites ([www.starionenergy.com](http://www.starionenergy.com) | [www.communityenergyinc.com](http://www.communityenergyinc.com) | [www.sterlingplanet.com](http://www.sterlingplanet.com)) they can facilitate the conversion process. If the potential sign-up feels uncomfortable entering the information themselves, a member of the Green Team can do it for them.

Conversion itself is quite simple. To convert to Starion Energy, all that is required is the account number, name key, and service reference, in addition to the residential address and account name holder. All of these components are listed on the electric bill itself (Starion Energy provides an example electric bill that shows where to find all these components on a Connect Light and Power bill). To convert to Community Energy or Sterling Planet, the same information is required.

As everyone who is going to the ice cream shop for free ice cream has *already brought the necessary materials for sign-ups with them* (namely, an electric bill), helping them convert will be straightforward. There is no struggling to find scraps of paper at home, no confusing online sign-ups: everything is there ready-to-go.

This event would be promoted by the ice cream shop two weeks in advance. However, once a relationship has been started, it should be easy to maintain similar events over the course of the summer (and next summer too). Moreover, this relationship with the owner can be leveraged in the creation of discount ice-cream prices for residents of the town who have converted to clean energy.

*Merchants Association Discount:* Woodstock's Merchant Association is an organization of local merchants that reside in Woodstock. While a large town, Woodstock's appeal is not in its landmass but in the character of its local businesses. In utilizing the Merchants Association, we make the assumption that 1) Woodstock residents frequent these businesses often and 2) that the Merchants Association is amenable to the idea of offering a discount for renewable energy.

**Plan of Attack:** To offer Woodstock citizens *another* incentive to convert to clean energy, the Merchants Association of Woodstock can offer discounts (10-20%, negotiable) on all items in associated stores for card-carrying members of the Connecticut Clean Energy Fund (a database can be created of residents that sign up to Renewable Energy). Frugal citizens love to save money, and if they can save money at places they frequent, all the better!

This may or may not require the Green Team's organization become a member of the Merchant's Association, however, it will take negotiations to find a suitable discount that does not penalize the participating stores. Part of the negotiations should include in-store promotion of this discount, and it may be practical to implement some sort of sign-up system within each Merchants Association store.

For example, if there are paper forms available for the renewable energy fund, providing merchants with copies, as well as prepaid envelopes addressed to the specific energy providers, could generate sign-ups. Employees would just need to be informed that the information required to fill out the paper form comes from customers' electric bills. The idea is similar to that of a small package store also acting as a post office. By giving the citizens of Woodstock more places to sign-up, especially convenient places to sign-up, then the renewable energy campaign will succeed.

*Supermarket and Drugstores:* In continuing with the theme of going to the residents, the Woodstock Green Team should consider tabling at the other popular locations: supermarkets and drugstores. Both of these places are hubs of residential life, and at least every citizen in the town has to step foot into one or the other during the course of a week. By speaking with managers of regional grocery stores, peak customer times can be assessed and proper tabling times scheduled accordingly.

**Plan of Attack:** By having a presence at local grocery and drug stores, the Green Team is ensuring that renewable energy program is highly visible and cannot be ignored. A simple table set up at entrances and exits over the course of several weekends could mean the difference between 1 and 0 sign-ups. Even if no one switches their energy plan during the tabling time, at least they become aware of the options.

Consider the mother who ignores the Green Team table, does her shopping, and then returns home. On her way, she passes by the local ice cream place, and notices that in two weeks free ice cream will be given out to those who bring certain materials and show them to the cashier. Then she decides that she has forgotten something and slips into a local store and sees a 20% discount available on all items if she can show that she is a user of clean, renewable energy. These little nudges build up over time!

**Performance Metrics:** Indication that the awareness campaign has succeeded can be measured in the number of sign-ups received at the end of each period. The recommended evaluation periods are as follows:

- **1 Month: 30 sign-ups**
- **3 Months: 65 sign-ups**
- **5 Months: 110 sign-ups**

We start the sign-ups small since we want to bolster morale and create momentum for the initiative. Setting an overly aggressive or impossible goal is not practical, given that the *real* focus of this initiative is in the successful awareness raising.

The amount of sign-ups per month is an indication of the effectiveness of the various campaigns. Should more than 30 sign-ups occur during the hot summer months, then it can be inferred that the outreach incentive campaigns such as free ice cream are effective ways to communicate the message. It should be noted that we do expect a surge of initial sign-ups, as the campaigns are still new and fresh. As the year progresses on, there should be no discouragement at a tapering of sign-ups. However, to avoid sign-ups from disappearing completely, it is up to the Green Team to continue to reach out to the community of Woodstock and make themselves visible. Remember, once the Green Team stops tabling and has become invisible, awareness (and sign-ups) will end.

## **Sustainability Initiative: Small Business Outreach**

**Goal:** Increase awareness about better, more sustainable business practices that can serve as a model for saving a small business money as well as educating them on more environmentally friendly options for power and materials. Educating businesses on how to convert to these better practices can be challenging for a number of reasons including, but not limited to, businesses being unaware that alternatives exist, lack of obvious incentives, lack of support, and lack of outreach to small businesses.

### *Benefits*

*Environmentally*, to anyone who is familiar with sustainability in the work place the benefits seem endless, but to those who have not been educated on these topics it can seem like a meaningless time consuming task. The use of non-renewable energy such as fossil fuels or coal and wasting resources such as paper or water has a lasting impact on the earth and on human health. Short-term effects on the earth are deforestation, pollution of rivers, lakes, and reservoirs. This can lead to issues such as contaminated drinking water and air quality issues that can have severe short and long-term effects. Deforestation can lead to extinction of plants and animals alike. The mining of coal can completely eliminate all vegetation and significantly degrade the air quality to the point of causing respiratory issues in people of all ages.

*Economically*, as a small business the benefits that come from converting to renewable energy can be numerous. Benefits can be recognized from a financial perspective as well as used as a strong marketing tool. Not only is renewable energy good for the business's bank account it also creates jobs which is good for the economy as a whole. The money spent on renewable energy stays in the U.S. and often times stays within the same state, and boosting the local economy means a boost in sales for your small business.

With the use of fossil fuels come trade disputes, political unrest, and other impacts that can negatively affect the economy. In addition to switching to renewable energy, companies can make additional changes to their buildings depending on the size and number of employees who work in the facilities on a regular basis. Examples of these changes are weatherization, which includes efficient windows and insulation, along with a number of other changes that will be outlined and explained further later. Another simple measure that can be taken is simply replacing incandescent light bulbs with CFL bulbs. These simple measures combined with other changes and converting to a renewable energy option can provide your company with substantial savings.

## **Small business Outreach**

**The Premise:** The Connecticut Clean Energy Fund has established a variety of programs and funding opportunities for owners of business to make changes and benefit from clean energy. CT Clean Energy Options is the main focus of the outreach program. The program allows individuals and businesses to continue to use their current delivery system but switches them from a non-renewable generator to a renewable generator producing energy from either small hydro or wind. For large businesses, consuming over a certain amount of energy (100,000 kilowatts) the town is eligible to earn more points toward solar panels for one location in the town. The main point to keep in mind is that as more individuals and businesses sign up for the clean energy less non-renewable energy will be generated and this will lead to a cleaner earth.

**Objective:** The goal of small business outreach is to increase awareness among businesses in order to help them transition into best practices and to educate them and assist them in the transition to cleaner energy. A target goal of adding the merchant association along with Line Master Switch and Crabtree & Evelyn© to the list of current users of renewable energy has been made. Additionally educating them on the benefits of energy efficient practices and helping them with the transition is a further goal.

**Approach:** The proposed plan of action to sign up small businesses is as follows; create a presentation outlining benefits of the new energy plan, select one or more members of Green Team to approach the Woodstock Merchants association, local farms, and larger businesses to provide them with a presentation and accurately answer any questions they have and properly address their concerns. It is the responsibility of Green Teams to inform these people that there is an alternative generation supplier, Starion Energy.

With Starion Energy, customers, both large and small, can save on their generation costs while keeping the same bill. Enrollment is free, there are no additional charges, you keep the same bill, the service you receive is the same, you still use your local utility for servicing, and the program can be canceled at anytime. The only action required by the customer is to visit the Starion Energy website (<http://www.starionenergy.com>), and proceed through the simple steps of conversion.



*Farms, Line Master Switch, Crabtree & Evelyn, and other large businesses:* Woodstock is home to a number of commercial farms, Sherman Farms and Fairholm Farms Inc., and large manufacturers. Because most farms require constant electricity, the costs can be extremely high. This can also be the case for manufacturers who are lighting their facilities during non-operating hours. By educating these business and farms you are not only converting large power users but you are also educating the individuals who run them and who have influence in their community.

**Plan of Attack:** Creating an outreach program designed to target both businesses and small and large farms is the first step. This includes using any success stories from local farms to convey the benefits of the transition. Second contact must be made to the larger businesses that are identified as key players, meaning that they are active and influential within the town. A time to meet must be set up to provide them with the presentation, it is also important to remember they are running an operation that requires almost 24 hours of attention so the presentations must be brief but informative.

After the presentation provide them with any appropriate literature to help them further inform themselves and let them know that if they are not ready to begin making the changes that day that you will follow up with them and set a date to do so. If a number of these businesses are available at the same time a group presentation may be the most appropriate, however if this is done be sure that the presentations are brief and concise so the attendees feel comfortable asking questions and there is enough time to do so.

*Woodstock Merchants Association:* The Woodstock Merchants association is membership organization of the local merchants in Woodstock including antiques, crafts, florists, furniture makers, pottery, lodging and more. The association acts as a marketing channel as well as a place to find people with similar interests. The association does a number of things for businesses and would be an excellent group to educate so they can do further outreach to small businesses.

**Plan of Attack:** An educational presentation needs to be created that appeals to small businesses informing them of the benefits of converting to clean energy. A version of the presentation for larger businesses and farms can be used for small businesses with small adaptation depending on business size. This presentation then needs to be presented to the individuals in charge of outreach for the Merchants Association, Kris Reynolds, and Chris Durst. Gaining the support of these two individuals is critical because of the influence the association has in the town. After the presentation, provide the necessary literature to further educate and inform them. Also, arrange for a time to follow up in order to find ways to team up with the association.

Once a relationship has been established, it would be beneficial to collaborate and add a page to their website to reach out to the small businesses. The next step would be to set a goal for sign ups and arrange an outreach meeting with members from the association to provide them with the information necessary to educate them on clean energy. Then arrange for a follow up event to provide an opportunity for merchants to come back and sign up for clean energy. This event can be advertised through the Merchants Association website along with any other forms of outreach they utilize.



## **Performance Metrics:**

Indication that the outreach has been successful can be measured in the number of sign ups that take place every three months. For example:

- End of month one- goal: to have presented to a minimum of 5 farms and large businesses and have their commitment.
- End of month three- goal: to have presented to merchants association and have established an outreach goal for small businesses.

The number of conversions to renewable energy is the indication of success of the programs. It is up to the Green Team to decide on the number of individual business they expect to bring into the program. It is important to keep in mind that the more business using large portions of energy gain more points for the town.

## **Sustainability Initiative: Energy Efficiency**

### **Goal**

“There’s no cheaper, cleaner power than power you don’t have to produce.”<sup>5</sup> Energy efficiency means using less energy to perform the same function while enjoying the same quality of life. Energy efficiency is the most viable, easiest way that people can save money, reduce their environmental footprints, and make Woodstock a more sustainable town.

### **Benefits**

*Economically*, energy efficiency measures bring obvious dollars saved. According to the U.S. Department of Energy (DOE) and the Environmental Protection Agency (EPA), Americans saved \$19 billion on utility bills in 2008 thanks to energy efficient products and practices. In addition, estimations from the American Council for an Energy Efficient Economy (ACEEE) showed that from 2006-2020, extended energy efficiency tax incentives could reduce consumer energy bills by \$27 billion and reduce peak electric demand by more than 6,000 MW (equivalent to the capacity of 20 medium power plants).<sup>6</sup> Energy efficiency is important to Woodstock because by improving energy efficiency, people can decrease the size and cost of the overall renewable energy system that they will need for their home. Thus, it is the primary step toward registering for renewable energy program. Furthermore, it helps them save money on their overall electricity bill.

*Environmentally*, energy efficiency measures help reduce greenhouse gas emissions and industrial pollution. As of 2000, 62.6% of U.S. acid rain, 21.1% of U.S. urban smog, and 40% of U.S. greenhouse gasses come from electricity production. In addition, “56% of nitrous oxide emissions and 34% of carbon emissions are created as a by-product of transportation.”<sup>7</sup> If everyone is aware of the impact of energy efficiency on the environment and takes immediate action, these pollutants will be tremendously reduced.

*Socially*, saving energy today means giving a better future to the next generation. More energy efficiency means less money spent on energy by many sectors, from private to public. The money saved can instead be used for healthcare, education, consumer, and other services. As noted in a study by the Rocky Mountain Institute, in efficient buildings labor productivity increases by 6-16% thanks to better air and lighting. Consequently, this creates a more comfortable and quieter office, and therefore a healthier work environment. For individuals actively participating in sustainability initiatives through renewable energy sources at home, they will also enjoy a healthier, more responsible lifestyle, without cost increases, while they make a significant, positive impact on their environment, and that of future generations.

Thus, energy efficiency is a critical part of creating stable, clean energy prices in the future; the problem is how to make residents and businesses practice energy efficiency in their daily lives.

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<sup>5</sup> –Gary Zarker, Seattle City Lights

<sup>6</sup> <http://ase.org/content/article/detail/2862>

<sup>7</sup> Energy Information Administration

## **Energy Efficiency for Residents**

**The Premise:** Though energy consumption varies from home to home, in North American homes heating and cooling are responsible for 44% of energy use, while lighting, cooking and appliances (except for refrigerators) consume 30%. Water heating accounts for 14% of home energy use, and the refrigerator about 9%.<sup>8</sup> These numbers help us recognize and target the most obvious energy consuming devices.

**Campaign name:** Sustainable Homes

**Slogan:** Flip a switch, flip the environment!

**Objective:** To raise people's awareness about the benefits of energy efficiency, make them aware of ways to be energy efficient in their daily practices and provide them with practical measures applicable to their home.

**Approach:** Useful tips for a sustainable home will be printed in the form of a leaflet (Addendum A) and will be uploaded to the Woodstock website under the Sustainability tab so that people can easily access it. Some accessible venues to deliver leaflets include:

- Churches
- Schools
- Ice Cream Shop/Groceries stores
- Supermarket and Drugstores
- During the events organized for people to sign up for the Renewable Energy Program

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<sup>8</sup> Simple Energy Saving Strategies by Dan Chiras

## Energy Efficiency for Commercial Businesses

*Campaign name:* High Performance Buildings

*Slogan:* The greener your office, the greener the savings!

**Objective:** To raise businesses' awareness about the benefits of energy efficiency and provide them with practical measures applicable to their office buildings.

**Approach:** Useful tips for green offices will be printed in the form of a leaflet (Addendum B) and will be posted on the website under the Sustainability tab so that companies can easily reach it. As there are only a few businesses, the Green team can send the handout directly to all of them. Office buildings can achieve energy efficiency in various ways:

- Using higher efficiency lighting (ex. high-pressure sodium is good for warehouses).
- Modifying the Air Conditioning system to reduce its energy usage.
- Using a Heating, Ventilation, Air Conditioning (HVAC) expert.
- Using high efficiency refrigerators for food preparation (commercial kitchens) will make a big difference.
- Update/design new buildings to minimize energy waste. For instance, situating a building with large windows facing south to capture sunshine in the winter can help reduce energy for heating, and planting trees to provide shade in the summer helps reduce energy for cooling. Other options, such as proper insulation, using double pane windows, and maximizing green space to decrease heat absorption can achieve energy efficiency.
- Eliminating phantom losses by switching off all office devices that are not in use.

**Performance Metrics:** Indication that the awareness campaign has succeeded can be measured by a reduction in energy usage. While households and businesses can gauge the drop their electrical load by themselves, the Green team can contact with the Connecticut Light and Power to get the total energy consumption of the whole town. The load shed itinerary can be suggest as follows

- **1<sup>st</sup> Month:** 3000 Kilowatt reduction
- **3 Months:** 5000 Kilowatt reduction
- **5 Months:** 8000 Kilowatt reduction

The amount of energy reduction per month is an indication of the effectiveness of our campaigns.

## **Sustainability Initiative: Lighting**

### **Objective:**

To educate residents and businesses on the short and long-term benefits of switching to high efficiency lighting. The short-term benefit is Woodstock residents and businesses can save money; meanwhile the long-term benefit is the involvement in supporting the green environment for the next generation. By offering residents and businesses easy opportunities to exchange their light bulbs, the Green Team should be able to make significant progress in reducing the amount of incandescent bulbs used within the town.

### **Benefits:**

The benefits of high efficiency lighting are clear. Not only does high efficiency lighting save energy for the next generation by reducing the amount of energy required to light the bulb, it also saves money on energy consumption. High efficiency light bulbs save you money in the long term because 1) you don't have to replace bulbs as often and 2) because the bulbs use less energy, **you** are using less energy. The less energy you are using, the less energy you are charged for your electric bills, and the less money you have to spend on it.

### **Consider these facts:**

- The average home spends about **25 %** on its electric bills for lighting.<sup>9</sup>
- Schools, stores, and businesses spend about **60 %** of their electric bills on lighting.
- Today, most commercial building and homes still use the incandescent bulbs.
- Incandescent bulbs are **not efficient** because from the electricity they use, only about 10 % is converted into light. The other 90% is converted into heat. When we install a CFL bulb, we *don't* pay for heating but we pay for the light.<sup>10</sup>
- Incandescent bulbs are also dangerous:<sup>11</sup>
  - ***Heat danger:*** even the smallest bulb generated a lot of heat. If a light bulb burns out and is not given sufficient time to cool, fingers can be severely burned.
  - ***Breakage:*** incandescent bulbs have very thin glass. They are extremely fragile and can easily break, causing painful lacerations if not handled properly.
  - ***Explosion risk:*** there is air inside of a light bulb. This air is quite cold, and when heated by the copper filament, there is a chance that the air inside will expand too rapidly and cause the bulb to burst.

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<sup>9</sup> [http://www.need.org/needpdf/infobook\\_activities/IntInfo/ConsI.pdf](http://www.need.org/needpdf/infobook_activities/IntInfo/ConsI.pdf)

<sup>10</sup> [http://www.need.org/needpdf/infobook\\_activities/IntInfo/ConsI.pdf](http://www.need.org/needpdf/infobook_activities/IntInfo/ConsI.pdf)

<sup>11</sup> Five Potential Dangers to consider when using incandescent light bulb :

<http://www.doityourself.com/stry/5-potential-dangers-to-consider-when-using-incandescent-light-bulbs>

- ***Eyesight dangers:*** the light of even a 40 or 25-watt light bulb can be enough to harm human eyesight. Staring into incandescent light bulbs can cause severe eye damage, including cataracts.
- ***Environment dangers:*** incandescent bulbs are authorized to be put right into the trash and then hauled away by the local garbage truck. For this reason, there is a lot of unnecessary bulb trash being built up in landfills.

### **Approach:**

Starting is easy, and we recommend three ways that residents and businesses should convert to high efficiency lighting. See Addendum C for details about implementation and suggestions.

1. Switch the use of incandescent bulb to Compact Fluorescent Light (CFL)
2. Change behavior to be more efficient.
3. Conduct a “Bulb Exchange Day.”

### **Performance Metrics:**

Measuring success for this initiative is based around the conversion of residents and businesses in Woodstock from incandescent to CFL bulbs. By working with venues in Woodstock that sell CFL light bulbs, the Green Team should be able to keep up-to-date with town purchasing habits. We suggest the following short-term goals for incandescent to CFL conversion:

- **End of Bulb Exchange Day:** 30 residents/businesses buy/switch to CFL bulbs.
- **4 Months:** 60 residents/businesses buy/switch to CFL bulbs.
- **6 months:** 90 residents/businesses buy/switch to CFL bulbs.

The Green Team can measure the conversion rate by periodically questioning residents about their purchasing habits and light-bulb consumption. This data should already be collected for the formation of the Bulb Exchange Day (Addendum C); and as a result, this follow-up is merely an extension of the event and the groundwork for future Bulb Exchange Days.

## **Sustainability Initiative: Paper Reduction & Recycling**

**Objective:** Woodstock has many small businesses, several are located within residential homes, and it takes a lot of paper to run them. From bills to letters, paper is in an integral component of business that many of us take for granted. We can significantly increase our paper usage efficiency while reducing the amount of paper we use overall. All it takes is a willingness to change.

### **Benefits**

*Economically*, by saving paper, you reduce costs. For many, paper costs may be irrelevant. In our homes and offices, paper is a necessary cost. However, while we may not consider the initial cost of paper, there are hidden costs associated with it. We have to buy ink to print the paper, pens to write on it, staplers and staples, envelopes and stamps, etc. In thinking of paper, we cannot neglect all the other investments required to make our paper usable. The paper itself is just the tip of the iceberg, and the associated costs with paper can sometimes be up to 31 times that of the original paper cost. If we change our behavior regarding paper, we can easily save almost 50% of that paper, as well as our money.

*Environmentally*, by reducing paper usage, we can minimize our impact on the world. Creating paper costs trees, but it also costs much more. It takes water to convert woodchips into paper, it requires energy to shred the wood into chips and cut down the tree, and it requires mining and refining of fossil fuels to create energy. It takes on soda can of water to produce a sheet of paper, and one fifteen year old tree to create half a box of paper. Paper substantially increases our environmental footprint.

*Socially*, many of us take for granted that paper allows us to not only enjoy our lives, but also go about our daily routines with greater efficiency.<sup>12</sup> From the thinnest tissue to the most absorbent diaper, to the toughest corrugated box, there are almost as many different kinds of paper as there are uses for it.

As we know the benefits of paper, it is clear that we must work to make our proper usage more efficient and less wasteful. Both paper reduction strategies and recycling are easy to do, are good for business and the environment, but can be difficult to implement because of long-standing habits. By breaking these habits, changes can be made.

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<sup>12</sup> <http://156.98.19.245/paper/>

## **Paper Reduction**

**Objective:** To increase residents' awareness about paper reduction both in a commercial and residential setting and introduce several practical methods and tools to reduce paper consumption without compromising comfort and convenience.

**Approach:** To create awareness about paper reduction within Woodstock, there are several courses of action recommended for the Green Team to implement:

1. Give citizens and businesses some numbers on paper consumption, and help them to generate an idea about how much paper they consume in their everyday life and the amount of environmental cost they incur as a result.

### **Shocking Numbers on Paper Consumption:**<sup>13</sup>

- The average office worker uses **10,000 sheets** of copy paper each year.
  - The United States alone, which has less than 5% of the world's population, consumes 30% of the world's paper.
  - Over 40% of wood pulp goes toward the production of paper.
  - Printing and writing paper equals about one-half of U.S. paper production.
  - The costs of using paper in the office can run 13 to 31 times the cost of purchasing the paper in the first place!
  - Citigroup, a large financial services company, determined that if each employee used double-sided copying to conserve just one sheet of paper each week, the firm would save \$700,000/year.
  - Bank of America cut its paper consumption by 25% in two years by increasing the use of on-line forms and reports, e-mail, double-sided copying, and lighter-weight paper.
2. Inform the town of Woodstock on the following useful tips for paper reduction. (Addendum D provides specific on paper consumption and useful tips for paper reduction.)
  3. Collect some good paper reduction tools for the residential and commercial paper users in Woodstock. Let them choose from these options for free or at a low price to save money.

### **Examples of Useful Tools for Paper Conservation (Websites Links)**

- *Pay your bills online:* <http://www.bpay.com.au/receivingbills/receivebills.aspx>
- *Edit your documents before printing:* <http://www.printgreener.com/>
- *Paper calculation:* <http://www.edf.org/papercalculator/>

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<sup>13</sup> <http://www.ju.edu/departments/sustainability>



4. Email the information found in Addendum D, as well as the available links, to the businesses and residents of Woodstock and paste them on the town website.
5. Post paper reduction tips and tools (Addendum D) on the blackboards of schools in Woodstock. Hold a quiz raffle during community meetings or on the community website, and prepare an attractive gift in advance. By doing so, encourage students to join the game and if their parents or grandparents participate too, that will be even better.

**Examples of Useful Tools for Paper Conservation (Websites Links)**

- <http://www.thatquiz.org/>
- <http://www.quizrocket.com/>
- <http://www.proprofs.com/quiz-school/>

**Performance Metrics:** Measuring the success of the paper reduction initiative is not something that the Woodstock Green Team can easily do, unless it does a monthly survey of households to see their expenditures on paper and paper-related products (i.e. printer ink, pens, etc.). Businesses and residents should be in charge of calculating their own decreases in paper-related expenditures. Any decrease in paper consumption is a victory.

## **Paper Recycling**

**Objective:** Paper recycling is already well established in Woodstock. However, clear, concise instruction to both residents and businesses and the Green Team would be increase the efficiency of the process.

**Approach:** In increasing the efficiency by which paper recycling occurs in Woodstock, we offer the following recommendations:

### ***Aim at the right recyclable.***

- Recycling helps the environment by recovering valuable resources and turning them into new products we use every day. To make sure the program is targeting the right items, conduct an audit of the waste stream in every workplace to identify and quantify potentially recyclable materials. Specifically, look for items that are:
  - Present in large quantities,
  - Relatively free of contamination (see Addendum D), and
  - Easily separated from other materials.

### ***Take the advantage of the Transfer Station***

- Collection is just the first step in recycling. Making sure that paper reaches the transfer station is the second step. Maintaining an efficient and cost-effective collection schedule is key to making sure that there is no backlog! Woodstock's transfer station is 49 Paine District Road 860-926-2770.

In order to ensure that recycling remains a focus within Woodstock and that the transfer station is regularly used, we suggest that the Green Team establish small groups of committed students and adults who will work with local small businesses, schools, and residential communities to create and implement recycling plans. These small teams would assess the amount of paper-waste created in these locations and offer suggestions about how to eliminate excess paper waste and make sure that the waste reached the transfer station in a timely manner.

**Performance Metrics:** Without a paper-only recycling related program, it will be hard for the Green Team to measure the specific amounts of paper that are being recycled by the community. While the number of additional transfer station permits each year can be considered a good tool to assess the amount of responsible recycling that occurs in Woodstock, the transfer station is not limited to only paper-goods, thus it would be hard to get a precise number for paper recycling each month. However, the Green Team can measure the amount of paper recovered or projected to be recovered by the Green Team during the implementation of the initiative found in the Action Plan.

## **Future Initiatives**

The initiatives that we have provided only scratch the surface of all the possible actions that Woodstock can take to become more sustainable. Should the town of Woodstock choose to pursue any further actions, we recommend that the following options be considered:

**Solar Power:** Woodstock has a great deal of open land that is owned by the town. This land is unused and is a prime candidate for the construction of solar farms. Woodstock would be able to harness the power of the sun and sell it into the grid system, to help power Woodstock's homes and businesses.

Many towns around the United States have begun the process of relying on solar power. Gainesville, Florida, for example, has been installing solar panels on the rooftops of its buildings. The town's success comes from its new "feed-in" tariff, which requires local power companies to buy renewable energy from independent producers, at rates higher than their average cost of production<sup>14</sup>. This allows anyone with solar power panels on their house to generate a profit. Electricity ratepayers see a rise in their bills (for Gainesville, this was a 1% increase), but also stand to generate profit from their solar power and other renewable energy initiatives.

Solar power and photovoltaic (PV) systems are available within Connecticut for installation or rental. Traditionally, Connecticut residents typically pay 20 cents per kilowatt-hour for electricity from their utilities. However, over the course of the PV system's lifetime, this cost decreases. The cost of installing a PV system is \$8 per watt installed, however, rebates are provided to pay for half the installation cost. Those homes with PV systems installed can apply for up to a 30% tax-deductible credit for the cost. Homes with these systems also receive renewable energy certificates (RECs) which can be sold to organizations. Selling RECs can provide several hundred dollars of extra income per year. More information and pricing can be found at the Connecticut Clean Energy Fund's website (<http://www.ctcleanenergy.com/>).

**Organic Farming:** While Woodstock has many farms, only a handful of them are organic. Finding ways by which to have the non-organic farms convert to more organic practices would be beneficial for the quality of not only the food, but also the soil in which it is grown and the people that consume it and make a living from selling it. Organic farming has many positive environmental impacts: it enhances soil structure, conserves water, prevents climate change, and maintains biodiversity<sup>15</sup>. Chemical fertilizers and pesticides are eliminated from the farming process, as are the use of genetically modified organisms. With less pesticides and fertilizers contaminating ground water and ponds, we can worry less about eutrophication, killing wildlife, and poisoning our consumers.

The essence of organic farming is in maintaining the environment for the long term. Natural environmental changes take place over long periods, but human interaction with nature has increased the speed at which these changes occur. Sustainable farming practices found in organic farming help

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<sup>14</sup> <http://www.gainesville.com/apps/pbcs.dll/article?AID=/20070211/EDITORIALS0101/70211039/-1/editorials>

<sup>15</sup> [www.ifoam.org](http://www.ifoam.org)

produce food that maintains an ecological balance<sup>16</sup>. Crop rotations encourage soil regeneration, organic fertilizers and pesticides preserve water quality and reduce greenhouse emissions, and together they both protect the biodiversity of the planet.

Getting farms to “go organic” will require the aid of the current organic farms in the area. By using the methods outlines in the Small Business Outreach, it should be possible to have all the farms come together to collaborate in workshops and meetings about organic farming and environmental sustainability.

**School Outreach:** Perhaps one of the best ways to expand the Green Team in Woodstock is to reach out to students. Students are a huge, untapped resource in terms of parental persuasion and general free time. High school students, especially those who are looking for community service opportunities, are excellent candidates for volunteer work and tabling at Green Team events. They have the schedule flexibility to make many events as well, and by virtue of who they are, they can spread sustainability messages to their friends.

If the Green Team was to attend school board and PTO meetings, they might be able to find willing teachers to sponsor an “Eco Club” in each of Woodstock’s schools. These Eco Clubs would be the representatives of the Green Team in the community, helping to spread initiatives and town plans with dedication and motivation.

**Waste Management:** After examining the current waste system in Woodstock, it has become obvious that a more inclusive system may be more effective in decreasing the communities total landfill waste. The current system of using a transfer station is more than likely not appealing to all citizens. The cost for a permit and the fact that community members must transport their own waste presents a few issues. The first obstacle is the price, which provides the individual with only a permit to bring one car to the transfer station. The second obstacle is transportation, if a community member does not have proper transportation they are unable to bring anything to the transfer station. The third obstacle is the lack of urgency and reminder in community members lives. If the choice to recycle with the current system is left up to the individual, they will more often than not just throw materials that could be recycled into the trash. Disposal is often a more attractive option because it eliminates the headache of sorting the recyclable waste from the non-recyclable waste and it is conveniently picked up every few weeks and taken away.

The proposal is a pickup system that can be funded with tax dollars. This would obviously take considerable planning, but if those who believe in it stress sustainability more, it can become achievable. This includes proper waste disposal. This program would have to first stress the benefits of a new program. Some of those benefits are as follows;

- Recycling more can decrease waste, which is good for the earth.
- A recycling program that provides pick up can eliminate transportation costs and work for the citizens.

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<sup>16</sup> [www.fao.org](http://www.fao.org)

- There would be no upfront cost and there may be funding from the federal or state government to implement a system such as this which would eliminate any cost to the citizens at all.
- This system creates a sense of urgency with the individual and the community because it is persistent. This urgency could be in the form of a recycling bin that is distributed to all community members. The bin is a reminder and allows for easier separation of waste and recycling.

There are other towns that have already implemented systems like this and they could be used as a guide. In Massachusetts, the town of Hopkinton has a very comprehensive system. This system would be a useful example for Woodstock because they have a similar population and demographics. If there is another town in Connecticut that has a waste and recycling program that has the above characteristics this town could also be used as a model.

## **Performance Measures and Reporting**

Below is a summary of the performance measures for the recommended initiatives:

<b><u>Initiative</u></b>	<b><u>Goal</u></b>	<b><u>Actual Performance</u></b>	<b><u>Comments</u></b>
<i>Residential conversion to renewable energy</i>	<b>1 month:</b> 30 Sign-Ups <b>3 months:</b> 65 Sign-Ups <b>5 months:</b> 110 Sign-Ups		
<i>Business conversion to renewable energy</i>	<b>1 month:</b> 5 presentations w/ commitment <b>3 months:</b> Merchants Association presentation		
<i>Energy Efficiency Measures</i>	<b>1 month:</b> 3000 kW reduction <b>3 months:</b> 5000 kW reduction <b>5 months:</b> 8000 kW reduction		
<i>Light Efficiency Measures</i>	<b>Bulb Exchange Day:</b> 30 residents/businesses switch to CFL bulbs <b>4 months:</b> 60 residents/businesses buy/switch to CFL bulbs <b>6 months:</b> 90 residents/businesses buy/switch to CFL bulbs		

It is also recommended that the Green Team be responsible for providing a quarterly report to the Selectmen with respect to implementation of this Sustainability Plan, which includes the selected performance metrics.

## **Creating Community Change**

Before committing to the implementing of a sustainability plan, it is essential that key representatives have been selected to act as change agents within the community. In order to create change in a community such as Woodstock a certain level of commitment is required. While the Woodstock Green Team is on the right track, they could also benefit from finding more members who are committed to creating change within specific community subgroups. Examples of these subgroups include the Woodstock Merchants Association, High School student groups, Religious groups etc. It is essential that these individuals are committed to a certain goal in order to assure that the required changes are accomplished.

### **Essential Elements and Participants**

- **Change Agents:** A change agent is an individual who is committed to encouraging and supporting change within the community and their specific subgroup. The individual(s) must be equipped to deal with setback and resistance to sustainability initiatives. These individuals are most successful when they are leaders of groups who can convey necessity and urgency. They must have the ability to create discussions within their respective groups and also span across and provide leadership to other groups. They need to possess the constant faith that their community can change and this belief needs to be something that they convey with conviction.
- **Changing the opposing mindset:** There must be a shift in mindset of those who are opposed to or uneducated on what a green community is. The entire community will need to have a single vision of what they expect their community to become. If there is any gray area, it will result in difficulty in achieving the goal. Resistance must be addressed as soon as possible in order to overcome it through communication and education. It is essential that these individuals or group are not approached with negativity. Instead, it is important to understand their concerns and answer their questions because in most cases they will only be opposed because they have not been presented with all of the necessary information for them to be able to make an informed decision.
- **Institutionalizing progress and change:** Once Woodstock has achieved its initial goals, they need to create a long-term plan for the town based on the success of different initiatives. This plan will address economic change, social change, and environmental change. The success of this plan relies on it being imbedded in the core beliefs, operations, and practices of the town.
- **Communication:** In order to achieve change constant and sound communication must take place. Residents and leaders within the community must find a way to keep each other informed about all changes and progress. It is also crucial that those working within the community government have a reliable channel of communication with those on the Green Team. There also needs to be a specified individual that citizens come to with questions who can provide them with and answer or direct them to the appropriate place to find the answer.

## **Change Through Leadership**

The success of the project depends on the commitment to sustainability by all the stakeholders in the town. However, because most people are reluctant to alter their habits, in the absence of a “dire threat” or urgency, creating change is a challenging process; people will keep doing what they always do. In order to convince people to become engaged in a common cause, strong leadership is required. The community leaders of the Green Team may find a daunting task ahead of them, but if they practice the following process as outlined by Dr. John Kotter<sup>17</sup>, change will come simply and naturally.

### **1. Create Urgency**

In order for the sustainability initiatives to be successful, it is critical that the community as a whole really wants change to happen. It is suggested that Woodstock’s Town Officials and the Green Team need to “buy into” the change and understand the community’s perceptions of the issues. They need to generate “a sense of urgency around the need for change” by underscoring the significance of the issues, identifying possible threats, and demonstrating why the new direction is the right one. Also at this step, the change leaders should open discussions and talk to their respective communities to reveal their current perspectives and forecast potential resistance.

### **2. Form a Coalition of Leaders**

Currently, the Green Team has five members to implement all the sustainable initiatives; they need to identify more leading members whose influence come from either standing, expertise, charisma or political influence. The prospects can be high-profile citizens, volunteers from institutions such as schools or libraries, owners of local businesses, parish leaders, etc. In forming a Coalition, leave no options out. These individuals must be enthusiastic about and committed the proposed programs and have the time to invest in them, as they will play the role of sustainability leaders for their peers.

This Green Team should have a good combination of members from various associations and different levels within the community so that they can tap into diversified groups of people. Importantly, the Green Team and its coalition need to have a strong alignment, or sense of purpose, to get the ball rolling. To legitimize the leadership team, it is recommended that Woodstock Selectmen vote to establish the Green Team, and designate the current members to serve for a 1-year term.

### **3. Create a Vision for Change**

The Green Team needs to develop an obvious, cohesive vision that can easily fall into people’s hearts and minds that creates self-motivation in the supporters to adopt sustainability.

- Vision: Build Woodstock into a sustainable community.
- Goal: 100% of residents and businesses switch to Renewable Energy at the end of 2015.

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<sup>17</sup> <http://www.kotterinternational.com/>



#### **4. Communicate the Vision**

The vision must be spread through the community on an on-going basis. The Green Team is responsible for communication of the vision via town meetings, emails, newsletters, and advertisements. Concerns, objections, issues, and anxieties must be addressed openly and honestly. Lectures and education programs are excellent ways to teach and inform businesses and residents about the vision. Through such coaching programs, community members can learn and see the sustainability plan from a broader perspective and view it as an opportunity to expand their options and contribute to the environment.

#### **5. Remove Obstacles**

Once the vision has been communicated, it is time to implement it. In order to successfully begin the change process, there should be a receptive environment for change. The Green Team needs to pay close attention to the ebb and flow of people's feelings and emotions towards the issues and work hard to preserve their positive attitude toward change. Residents and business owners need to feel that their efforts are encouraged, and rewards should be given to those who quickly embrace, accept, and implement the changes. In addition, change leaders should enhance capacity building by enabling community members to learn from one another and from their own experiences. Those who are resistant to the change must be identified and their needs and concerns must be addressed properly in order to gain their support and participation.

#### **6. Create Short-Term Wins**

Short-term wins are important to prove the feasibility and value of Woodstock's commitment to sustainability, to boost community confidence in the process, and make their endeavors seem meaningful. Successful implementation of the change, no matter how small, should be promoted widely and above all, frequently celebrated. For instance, increasing the number of people registered for the Renewable Results is an important part of keeping everyone motivated. When first implementing the sustainability initiatives, it may be best to set a low target and start with the simpler, more cost efficient programs that will have immediate benefits, such as changing to efficient lighting. Using CFLs for example will result in a substantial decrease in the electric bill, which will motivate town residents to participate even further.

#### **7. Build on the Change**

Once a small win is achieved, the Green team and its coalition should analyze the results to see what they can do better next, what went right, and what needs improving. Once small improvements have been accomplished, larger and more complex improvements can be undertaken. The idea is to encourage people to pursue continuous improvement, as the outcomes of the campaign can hardly be seen until it reaches a critical mass. Goals must be continually refreshed after each success, and ideas must be constantly generated by the Green Team to maintain momentum.



## 8. Anchor the Change

Finally, none of the previous steps are even remotely worthwhile if the changes cannot be made to last in the long term. Every sustainability initiative has to be embraced and adopted by everyone within the town as a part of their daily routine. If businesses begin to forget to turn off their lights at night then three months down the road they will soon return to their old habits. The changes and improvements in sustainability must be constantly discussed so that they remain on the forefront of everyone's mind. Successes should be recognized publicly, along with the individuals and corporations who assisted with the process. The vision, the plan, the accomplishments, the rewards, and benefits must remain uppermost in the minds of the residents.

## Conclusion

A lot of us have already heard the word "sustainability" since the term was first raised in the 1990s. It has been used many times in this plan, and will continue to be used by activists and naysayers alike. For a long time, we have been surrounded by all kinds of "green products," "sustainable projects," and so on. However, between our love affairs with foreign oil and our slowness to change our own daily habits, sometimes it may seem like sustainability is just a word in our vernacular.

But by the efforts of the Woodstock community and the individuals within it, we can breathe new life into this word. Sustainability is achieved through commitment, leadership, education, practice, and only through effort. It is through the actions of Woodstock's residents and its businesses that it will be realized. "Green Project" is no longer a remote word associated with the social reputations of big companies. It is about the love of our community and our beautiful homes within it.

The first time we came to Woodstock and drove around the community, we were all astonished by her natural beauty. From the delicate antique shops to the rustic farms, we knew that we had to make a serious effort to help preserve this wonderland. We know that Woodstock's citizens must feel the same way, and that they would want their children and future generations to enjoy the same natural beauty as they do. Likewise, we know that businesses that work within Woodstock want to help maintain the beautiful landscape and natural charm of the town they operate in. However, sustainability is quite challenging to implement because it is often assumed to be highly expensive, impractical and may appear to be overwhelming and complex for a small town.

In all the initiatives our team has presented, we have reintroduced the term sustainability and paired it with practicality. Everything that can be done to promote sustainability is done under a pragmatic and reasonable set of goals: to save money, live wisely, and preserve the natural resources of the community. That fact that Woodstock has individuals within its community that are willing to step forward and dedicate their free time to greening it is wonderful. That Woodstock even has the opportunity to become involved in programs such as the Connecticut Clean Energy Fund, even more so. From the viewpoints of the international students on the GSOM team, American communities have so much potential and are so lucky to be given the chance to engage in green projects.

As long as there is the desire and will, there are many areas in which we can take our first step towards sustainability. They do not have to be complex or expensive; they can be as simple as changing to a high-efficiency light bulb, or collecting the office paper we use for recycling.

## Action Plan

Week		Initiative Progress
1	7/11 - 7/17	<ul style="list-style-type: none"> <li>• <b>Leadership:</b> Begin to establish the Green Team's Coalition. Solicit interested parties; attend parish meetings, local merchant meetings, school board meetings, etc.               <ul style="list-style-type: none"> <li>○ When looking for volunteers, ask about better ways to reach and appeal to Woodstock's residents and businesses. Consider creating improvements to the Green Team website, such as allowing sign-ups for renewable energy online.</li> </ul> </li> <li>• <b>Renewable Energy (Residential):</b> Establish dialogue with owners of Evalin's ice Cream shop. Explain the need for renewable energy and the current problem in reaching citizens. Consider appropriate compensation or compromise in return for the free Ice Cream. Establish suitable set of dates, making sure to allow for appropriate advertising time. (Suggested: Weeks 4, 7, &amp; 9)               <ul style="list-style-type: none"> <li>○ Contact local supermarkets and drug stores; inquire as to whether it is viable to set up a Green Energy table outside the store. If so, begin immediately that weekend, bringing pamphlets about the energy and necessary signup sheets.</li> </ul> </li> <li>• <b>Energy Efficiency:</b> Discuss with the current Green team (Jim) about the design, content and printing jobs relating to the LEAFLET on Energy Efficiency for both Residential and Commercial sectors. Decide PICs (Person in Charge) for getting the handout printed and delivered.               <ul style="list-style-type: none"> <li>○ It is suggested that there should be at least one person in the Green team responsible for the Energy Efficiency initiative. This person will be the coordinator with the Green team and coalitions (volunteers) in each effort to implement the initiative. Also, they should coach both teams, keep track of the progress and the responses of their audience, and report these things to the team for further improvements.</li> </ul> </li> <li>• <b>Light Efficiency:</b> Discuss with the current Green Team about the design and the content of the leaflet about light efficiency.               <ul style="list-style-type: none"> <li>○ Discuss the possibility of the Bulb Exchange day. When recruiting for the Coalition, mention the need for volunteers and begin to gauge interest.</li> </ul> </li> </ul>

Eventually, a group of people will need to be chosen to collect information about the usage of CFL bulbs within Woodstock and how many will be required.

- Also, consideration as to where the CFL bulbs will be bought should be done at this time.
- Paper Conservation: Discuss with the current Green Team about the publication of “paper conservation” initiative. Also, it is a good idea at this time to decide who will handle this initiative (the PPC: person in charge of paper conservation).
  - Discuss the design, content, and printing requirements for the leaflet.
    - Suggestion: since the aim of “paper conservation” is to save paper, when designing the leaflet, the format should be as concise as possible. The leaflet should be print double-sides, preferably on recycled paper.
  - Discuss about uploading the leaflet onto the Woodstock Community website, or designing some online equivalent. Make it pleasing and eye catching, since there is no need to restrict content due to conservation purposes.
    - The Green Team may want to consider having a quiz online about paper conservation. A simple 10 question quiz could have some small prize, such as gift card.
- Small Business Outreach: For Renewable Energy, Establish relationship with Merchants Association and target local farms. Create educational presentation to present to Businesses.
  - Contact any members of Merchants Association who are have already converted to renewable energy and invite them to attend the presentation as a reinforcement in week 3, 6, or 8. Also, provide them with *Small Business Green Guide* to post on their website. This can also be added to the Green Team site. Presentations to businesses will take place in weeks 3 and 6 and 8.

2	7/18 –7/24	<ul style="list-style-type: none"> <li>• <b>Leadership:</b> Continue to establish the Green Team’s Coalition. Create listservs and meeting times for interested parties to attend. Canvas the town with fliers, create presence at town meetings, and set “green” agenda items for town meetings. The process of forming the Green Team never really “stops.” The Green Team should always be on the lookout for willing, committed individuals.</li> <li>• <b>Marketing Consideration:</b> Consider the possibility of approaching a radio program and asking for an interview. The interviewee should be an existing renewable energy customer that gets the benefit of the renewable energy program. The format of the interview should be question-and-answer from the listening audience. The interviewee should stress that the benefits about renewable energy, energy saving tips, and should give the contact information of the Green Team.</li> <li>• <b>Renewable Energy:</b> Provided that the dates were agreed upon the previous week, the Green Team should start selecting volunteers from its Coalition to work the table at the ice cream shop. <ul style="list-style-type: none"> <li>○ Also during this time, discourse should be opened with the Merchant’s Association to see if a discount for clean energy customers is viable. Discounts should be a permanent fixture and should be in place by Week 10.</li> <li>○ Continue tabling on weekends at the supermarket, using coalition volunteers. Tabling times should be during peak shopping hours, which can be assessed by talking to managers at each store. Remember to take phone numbers and contact information of those people who do not have the required materials to sign up but want to, so that follow up reminders can occur.</li> </ul> </li> <li>• <b>Energy Efficiency:</b> Leaflets should be available for delivery at this time. Also, the PIC of Energy Efficiency should work with Renewable Energy team to deliver leaflets at similar venues. The PIC should explain to the recipients on how helpful the leaflets are. Volunteers who help deliver the leaflets should also know how to communicate the message to the recipients.</li> </ul>
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3	7/25 – 7/31	<ul style="list-style-type: none"> <li>• Renewable Energy: Volunteers should be coached about how to sell renewable energy, and pamphlets should be created that detail the specific benefits of the conversion. <ul style="list-style-type: none"> <li>○ Tabling at the supermarkets should continue. Call residents for follow-ups reminders.</li> </ul> </li> <li>• Energy Efficiency: Continue to deliver leaflets at supermarkets. After this week, the team should sit together to evaluate the job done so far and the attitude of recipients towards the initiatives before continue to deliver at the ice-cream shops.</li> <li>• Light Efficiency: Consider the same impact of leaflets and information as with the energy efficiency initiative. <ul style="list-style-type: none"> <li>○ By this time, the radio interviewee should be selected. Ideally, 16 different people should be chosen, so that there are a variety of people</li> </ul> </li> </ul>

		<p>available to be interviewed over a two-month period.</p> <ul style="list-style-type: none"> <li>○ The Bulb Exchange Day advertisements should be finalized and distributed at hotspots.</li> <li>○ Data collection for the Bulb Exchange day should begin. Door-to-door questioning of residents and businesses is suggested. It is estimated that it will take about one month to collect this data.</li> </ul> <ul style="list-style-type: none"> <li>● Paper Conservation: A date and time for a presentation should be scheduled for a school-wide kick off of the initiative.</li> <li>● Small Business Outreach: Set up times with Merchants Association to give presentation to members on renewable energy.</li> </ul>
4	8/1 - 8/7	<ul style="list-style-type: none"> <li>● Renewable Energy: The week of the ice cream initiative. Tabling should occur from shop opening to close. Volunteers that were selected from the coalition should be tabling. Tabling may stop at the supermarket during this time.</li> <li>● Energy Efficiency: Begin to deliver leaflets at the ice-cream shop.</li> <li>● Light Efficiency: The first radio talk show is conducted. <ul style="list-style-type: none"> <li>○ Further radio interviews should be scheduled.</li> <li>○ Leaflets should be distributed at the ice-cream event.</li> <li>○ Cost of CFL bulbs should be calculated as data is collected. Bulbs should be bought at the end of the month, in bulk, based on final data.</li> <li>○ Continue advertisement of Bulb Exchange Day.</li> </ul> </li> <li>● Paper Conservation: Gather volunteers and coach them on the information found on the leaflets, as well as additional information about paper reduction and recycling. Have them table with the other initiatives, lending their voice to current matters within the community.</li> <li>● Small Business Outreach: Continue follow up with farms and Crabtree &amp; Evelyn © and Line Master Switch if there is not yet commitment.</li> </ul>

5	8/8 – 8/14	<ul style="list-style-type: none"> <li>• <b>Renewable Energy:</b> Begin discourse with the senior citizen centers. Arrange for suitable times to come and table. (Suggested: Weeks 5 &amp; 6 for “summer” conversion, 12 &amp; 13 for “autumn” conversion, and weeks 20 &amp; 21 for “winter” conversion.)</li> <li>• <b>Energy Efficiency:</b> Send the Leaflets for Commercial businesses <ul style="list-style-type: none"> <li>○ Start to deliver the Leaflets for School sectors (primary, high school and college)</li> </ul> </li> <li>• <b>Light Efficiency:</b> Continue advertisement of Bulb Exchange Day.</li> <li>• <b>Paper Conservation:</b> The PPC should lead the volunteer group and begin to deliver leaflets at hotspots. Should the quiz be implemented, they should encourage participation. As deliveries occur, the group should keep a watchful eye out for potential volunteers.</li> <li>• <b>Small Business Outreach:</b> Continue follow up with farms and Crabtree &amp; Evelyn © and Line Master Switch if there is not yet commitment.</li> </ul>
6	8/15 – 8/21	<ul style="list-style-type: none"> <li>• <b>Renewable Energy:</b> Tabling at supermarkets should continue.</li> <li>• <b>Small Business Outreach:</b> Set up times with Merchants Association to give second presentation to members on renewable energy.</li> <li>• <b>Paper Conservation:</b> continue to deliver leaflets and find volunteers for the Green Team.</li> </ul>
7	8/22 – 8/28	<ul style="list-style-type: none"> <li>• <b>Renewable Energy:</b> The week of the ice cream initiative. Tabling should occur from shop opening to close. Volunteers that were selected from the coalition should be tabling. Tabling may stop at the supermarket during this time.</li> <li>• <b>Energy Efficiency:</b> Continue to deliver leaflets at the ice-cream shops</li> <li>• <b>Light Efficiency:</b> Continue advertisement of Bulb Exchange Day.</li> </ul>

		<ul style="list-style-type: none"> <li>• Paper Conservation: Continue to deliver leaflets at hotspots and encourage people to take the quiz on the web. Tell people that the quiz will be finished at the end of September and that the winners will be published online. Also, continue to get volunteers for the Green Team.</li> <li>• Small Business Outreach: Continue follow up with farms and Crabtree &amp; Evelyn © and Line Master Switch if there is not yet commitment. <ul style="list-style-type: none"> <li>○ Continue to contact uncommitted farms.</li> </ul> </li> </ul>
8	8/29 – 9/4	<ul style="list-style-type: none"> <li>• Renewable Energy: Tabling at supermarkets should continue.</li> <li>• Energy Efficiency: Continue to deliver leaflets at supermarkets.</li> <li>• Light Efficiency: CFL bulbs should be bought and the Bulb Exchange Day advertised.</li> <li>• Paper Conservation: The PPC and the Green Team should work with the town hall to continue to distribute the message.</li> <li>• Small Business Outreach: Set up times with Merchants Association to give third presentation to members on renewable energy.</li> </ul>
9	9/5 – 9/11	<ul style="list-style-type: none"> <li>• Renewable Energy: The week of the ice cream initiative. Tabling should occur from shop opening to close. Volunteers that were selected from the coalition should be tabling. Tabling may stop at the supermarket during this time.</li> <li>• Energy Efficiency: Tabling at churches should begin.</li> <li>• Light Efficiency: Continue advertisement of Bulb Exchange Day.</li> <li>• Paper Conservation: The volunteer group should start to visit small businesses in the town, like restaurants and antique shops. The volunteer group, hopefully including students, should work with each of the small businesses to design a paper conservation initiative if they do not have one, and work to implement it into the business.</li> </ul>



		<ul style="list-style-type: none"> <li>• Small Business Outreach: Continue follow up with farms and Crabtree &amp; Evelyn © and Line Master Switch if there is not yet commitment. <ul style="list-style-type: none"> <li>○ Obtain contact list of non-committed Merchants Association members and contact them either by phone or email to set up a convenient time to meet to give them a short presentation on renewable energy.</li> </ul> </li> </ul>
10	9/12 – 9/18	<ul style="list-style-type: none"> <li>• Renewable Energy: Discounts with Merchants Association should be finalized. At new tabling events and town meetings, this should be stressed. <ul style="list-style-type: none"> <li>○ From this point, tabling at the supermarkets should continue for two weekends, every two weekends. You want to maximize your presence, but not burn out volunteers.</li> </ul> </li> <li>• Energy Efficiency: Tabling should occur with the renewable energy team.</li> <li>• Light Efficiency: Bulb Exchange Day. Depending on the success, another Bulb Exchange Day can be scheduled later in the year.</li> <li>• Paper Conservation: Work should continue with the small businesses.</li> <li>• Small Business Outreach: Continue follow up with farms and Crabtree &amp; Evelyn © and Line Master Switch if there is not yet commitment. <ul style="list-style-type: none"> <li>○ Continue to contact uncommitted farms.</li> <li>○ Continue to contact uncommitted Merchants Association members and provide them with information on renewable energy and greening tips.</li> </ul> </li> </ul>
11	9/19 – 9/25	<ul style="list-style-type: none"> <li>• Renewable Energy: Tabling at supermarkets and drugstores.</li> <li>• Energy Efficiency: Tabling at supermarkets and drugstores.</li> <li>• Light Efficiency: Tabling at supermarkets and drugstores.</li> <li>• Paper Conservation: Work should continue with the small businesses.</li> </ul>

12	9/26 – 10/2	<ul style="list-style-type: none"> <li>• Renewable Energy: Tabling at senior citizens center.</li> <li>• Energy Efficiency: Tabling at senior citizen center.</li> <li>• Light Efficiency: Tabling at supermarkets and drugstores.</li> <li>• Paper Conservation: Work should continue with the small businesses. The quiz should be removed from the Woodstock website and the results posted.</li> </ul>
13	10/3 – 10/9	<ul style="list-style-type: none"> <li>• Renewable Energy: Tabling at senior citizens center.</li> <li>• Energy Efficiency: Tabling at senior citizen center.</li> <li>• Light Efficiency: Tabling at supermarkets and drugstores.</li> <li>• Paper Conservation: Work should continue with the small businesses.</li> <li>• Small Business Outreach: Continue follow up with farms and Crabtree &amp; Evelyn © and Line Master Switch if there is not yet commitment. <ul style="list-style-type: none"> <li>○ Continue to contact uncommitted farms.</li> <li>○ Continue to contact uncommitted Merchants Association members and provide them with information on renewable energy and greening tips.</li> </ul> </li> </ul>
14	10/10 – 10/16	<ul style="list-style-type: none"> <li>• Renewable Energy: Tabling at supermarkets and drugstores.</li> <li>• Energy Efficiency: Tabling at schools.</li> <li>• Light Efficiency: Tabling at supermarkets and drugstores.</li> </ul>
15	10/17 – 10/23	<ul style="list-style-type: none"> <li>• Renewable Energy: Tabling at supermarkets and drugstores.</li> <li>• Energy Efficiency: Tabling at churches.</li> <li>• Light Efficiency: Tabling at supermarkets and drugstores.</li> <li>• Paper Conservation: Gather the volunteers together and have them share their experiences, their successes, and their failures about their work with the small businesses. Have them share feedback from the businesses, and prepare for the next set of businesses to work with.</li> </ul>

		<ul style="list-style-type: none"> <li>• Small Business Outreach: Continue follow up with farms and Crabtree &amp; Evelyn © and Line Master Switch if there is not yet commitment. <ul style="list-style-type: none"> <li>○ Continue to contact uncommitted farms.</li> <li>○ Continue to contact uncommitted Merchants Association members and provide them with information on renewable energy and greening tips.</li> </ul> </li> </ul>
16	10/24 – 10/30	<ul style="list-style-type: none"> <li>• Renewable Energy: Begin preparation for Spring/Summer initiatives. Start to organize meeting times.</li> <li>• Energy Efficiency: Evaluate activities and prepare for the next period.</li> <li>• Light Efficiency: Consider new initiatives to promote light efficiency, such as another Bulb Exchange Day in the spring.</li> <li>• Paper conservation: The volunteers should be separated into two teams: students and adults. The students should work on building the initiative within their school, while the adults will continue to work on building the initiative in small businesses.</li> </ul>
17	10/31 – 11/6	<ul style="list-style-type: none"> <li>• Renewable Energy: Finalize meeting times for Spring/Summer initiatives.</li> <li>• Energy Efficiency: Finalize the initiatives.</li> <li>• Light Efficiency: Finalize plans.</li> <li>• Paper conservation: Team work should continue.</li> <li>• Small Business Outreach: Continue follow up with farms and Crabtree &amp; Evelyn © and Line Master Switch if there is not yet commitment. <ul style="list-style-type: none"> <li>○ Continue to contact uncommitted farms.</li> <li>○ Continue to contact uncommitted Merchants Association members and provide them with information on renewable energy and greening tips.</li> </ul> </li> </ul>

18	11/7 – 11/13	<ul style="list-style-type: none"> <li>• Renewable Energy: Tabling at supermarkets and drugstores.</li> <li>• Energy Efficiency: Tabling at supermarkets and drugstores.</li> <li>• Light Efficiency: Tabling at supermarkets and drugstores.</li> <li>• Paper conservation: Team work should continue.</li> <li>• Small Business Outreach: Use committed members of merchants association and local farms to contact uncommitted parties to encourage them to set up meetings with a green team member.</li> </ul>
19	11/14 – 11/20	<ul style="list-style-type: none"> <li>• Renewable Energy: Tabling at supermarkets and drugstores.</li> <li>• Energy Efficiency: Tabling at schools.</li> <li>• Light Efficiency: Tabling at supermarkets and drugstores.</li> <li>• Paper conservation: Team work should continue.</li> </ul>
20	11/21 – 11/27	<ul style="list-style-type: none"> <li>• Renewable Energy: Tabling at senior citizens center.</li> <li>• Energy Efficiency: Tabling at senior citizen center.</li> <li>• Light Efficiency: Tabling at supermarkets and drugstores.</li> <li>• Paper conservation: Team work should continue.</li> <li>• Small Business Outreach: Continue to contact uncommitted parties via phone and email.</li> </ul>
21	11/28 – 12/4	<ul style="list-style-type: none"> <li>• Renewable Energy: Tabling at senior citizens center.</li> <li>• Energy Efficiency: Tabling at churches.</li> <li>• Light Efficiency: Tabling at supermarkets and drugstores.</li> <li>• Paper conservation: Gather the teams together and evaluate the work done by each. Again, have them share their successes and failures. Prepare for the up-coming initiative push for next month and prepare a plan for the initiative in 2011.</li> </ul>

		<ul style="list-style-type: none"> <li>• Small Business Outreach: Continue to contact uncommitted parties via phone and email.</li> </ul>
22	12/5 – 12/11	<ul style="list-style-type: none"> <li>• Renewable Energy: Tabling at supermarkets and drugstores.</li> <li>• Energy Efficiency: Tabling at schools</li> <li>• Light Efficiency: Tabling at supermarkets and drugstores.</li> <li>• Paper Conservation: Tabling push at supermarkets and drugstores.</li> <li>• Small Business Outreach: Continue to contact uncommitted parties via phone and email.</li> </ul>
23	12/12 – 12/18	<ul style="list-style-type: none"> <li>• Renewable Energy: Tabling at supermarkets and drugstores.</li> <li>• Energy Efficiency: Tabling at supermarkets and drugstores.</li> <li>• Light Efficiency: Tabling at supermarkets and drugstores.</li> <li>• Paper Conservation: Initiative push at schools.</li> <li>• Small Business Outreach: Continue to contact uncommitted parties via phone and email.</li> </ul>
24	12/19 – 12/25	<ul style="list-style-type: none"> <li>• Renewable Energy: Final last push at senior centers and supermarkets.</li> <li>• Energy Efficiency: Last push at hotspots.</li> <li>• Light Efficiency: Last push at hotspots.</li> <li>• Paper Conservation: Last push at small businesses.</li> <li>• Small Business Outreach: Continue to contact uncommitted parties via phone and email.</li> </ul>

25	12/26 – 1/1	<ul style="list-style-type: none"> <li>• Renewable Energy: Final last push at senior centers and supermarkets.</li> <li>• Energy Efficiency: Last push at hotspots.</li> <li>• Light Efficiency: Last push at hotspots.</li> <li>• Paper Conservation: Send thank you emails to everyone that the Green Team has connected with during the initiative program for their collaboration and cooperation. Finalize plans for 2011.</li> <li>• Small Business Outreach: Continue to contact uncommitted parties via phone and email.</li> </ul>
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## Appendix

### **Addendum A - Energy Efficiency Measures for Homes**

*First, have your home audited.* You can do a simple visual inspection to locate leaks in your house that allows the wind to blow cold winter air in and let warm air escape. Sealing these leaks (below doors, in windows, even through electric wall plates) and thereby preventing drafts will save you energy and money.

Alternatively, you can hire a professional to do more comprehensive and expensive tests on your home. The energy auditor will provide a written report that lists potential energy improvements such as sealing, insulation in walls, ceilings, floors, insulation for hot water lines from the water heater to various faucets in the house and replacement of old, inefficient appliances.

Also, you can go to this website to have an online preliminary audit.

[http://www.energystar.gov/index.cfm?fuseaction=HOME\\_ENERGY\\_YARDSTICK.showGetStarted](http://www.energystar.gov/index.cfm?fuseaction=HOME_ENERGY_YARDSTICK.showGetStarted)

Note: We suggest that Smart Power or Sterling Planet – Renewable Energy providers for Woodstock - should (Question....do they?) offer a free audit for Woodstock’s citizens as an incentive for them to enroll in the renewable programs. Doing so would increase the benefits for all participants: a free energy audit, thus less energy used, and a decreased cost in renewable energy.

*Second, retrofit your home for energy efficiency.* Retrofitting jobs include:

- Sealing cracks in the building envelope, sealing wall switches and electrical outlets. This is the easiest and most cost effective measure for your home.
- Installing insulation. The older the home, the more insulation is needed. It is recommended that you should go 30-40% higher than the required building code.<sup>18</sup>
- Insulating wall cavities and ceilings results in reducing heating costs in the winter and cooling costs in the summer.
- Upgrading windows partly or completely: installing storm windows, adding plastic or Plexiglas (clear, durable polycarbonate plastic) along the inside surface of the windows. Double or triple pane windows reduce heat transfer and save on heating costs.
- Installing light colored roofs (white is best) helps reduce air-conditioning loads.

Again, you can do most of the work yourself, or hire an energy retrofitter. Hiring a professional will definitely cost more; however, they execute the work quickly, efficiently and with minimal mistakes.

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<sup>18</sup> Mother Earth News Magazine, Summer 2007

Thirdly, choose efficient appliances, labeled Energy Star. You can reduce huge energy consumption by replacing energy-consuming appliances with newer, energy-efficient models. These devices include cooling equipments, water heaters, refrigerators, washing machines, and dishwashers. Though you have to pay more upfront cost, you will save money over the course of the life of the appliances.

Finally, eliminating phantom loads. Phantom loads occur when the appliances consume electricity even when they are “off.” According to the U.S. Department of Energy, 75% of the electricity used in the average home to power electronics is consumed when the appliances are turned “off.” Electrical appliances with lights or clocks (e.g. microwaves, coffee makers, and stereos), cell phones or computer chargers, televisions, and computers all entail phantom loads. Therefore, you should unplug devices when not in use.

The table below illustrates the phantom loads and the estimated associated energy and environmental costs of some common devices.<sup>19</sup>

Appliance	Watts	Hours/Day	Annual Cost (\$0.12/kWh)	Annual Emission of CO 2 (lbs.)*
Cell Phone Charger (not charging)	1	20	\$0.88	9.5
Microwave (with a digital clock)	1.5	22	\$1.45	15.7
X-Box 360 Gaming Console	2.5	20	\$2.19	23.7
Coffee Maker (with a digital clock)	3	22	\$2.89	31.3
Inkjet Fax	5	12	\$2.63	28.5
Stereo (digital display)	10	20	\$8.76	94.9
Cable Box	11	20	\$9.64	104.4
Desktop Computer (sleep mode)	20	12	\$10.51	113.9
Television (40" LCD)	25	20	\$21.90	237.3
Digital Video Recorder (DVR)	25	24	\$26.28	284.7

\* 1.3 lbs. of CO<sub>2</sub> emitted per kWh from natural gas.

### **Additional Energy Efficiency Tips**<sup>20</sup>

- Monitor your energy use by buying an energy monitor for around \$20 to decide how best to handle your appliances’ energy consumption.
- Buy an energy saver (\$30-\$60) and constantly adjust the energy supply from the utility to match the load of an appliance motor.
- Reduce 14% of household energy use for hot water by:
  - Washing clothes in cool water, investing in low-flow showerheads and aerating faucets, or just take shorter showers.

<sup>19</sup> U.S. Department of Energy

<sup>20</sup> Office of Renewable Energy and Energy Efficiency



- Turning down the temperature by a few degrees to save energy and money without noticing a difference.
- Installing heat traps, a drain-water heat recovery system, or a timer to reduce heat loss.
- Investing in a solar water heater, which can supply hot water for half of the year.
- Do the landscaping in a way that the sun can reach south-facing windows in the winter. Using trees and shrubs that have low crowns can also create windbreaks that will reduce wind chill factors around your house.

The following table demonstrates the dollars saved for every simple single action you take a day for energy efficiency.<sup>21</sup>

<b>Energy Efficiency Actions</b>	<b>Cost Savings Per Year</b>
Close lid while cooking.	\$6
Insulate hot water pipes.	\$7
Cook with toaster oven when making smaller dishes.	\$8
Lower washing machine temperature from hot to warm.	\$11
Turn off water when brushing teeth.	\$12
Install a water heater jacket.	\$13
Take showers instead of baths.	\$13
Thaw frozen food in air rather than hot water or microwave.	\$13
Fix leaky faucets. (Every drop is over 3,100 gallons per year wasted.)	\$15
Buy a pressure cooker (\$40) next time a cooking pot is needed.	\$16
Use larger loads in washing machine.	\$19
Install a low-flow showerhead.	\$19
Reduce shower length.	\$21
Use a power strip to eliminate phantom loads.	\$32
Install aerating facet in kitchens, (\$2-\$4)	\$34
Wash larger loads of dishes.	\$39
Use an inkjet printer (5 watts) rather than a laser printer (130 watts).	\$42
Install a programmable thermostat (\$25-30).	\$45
Replace incandescent bulbs with CFL bulbs.	\$47
Microwave your food 3 times a week instead of a conventional oven.	\$51
Buy an efficient front load washing machine.	\$65

<sup>21</sup> REAP (Renewable Energy Alaska Project)

## Addendum B - Energy Efficiency Measures for Businesses

### Energy Audits

If it is financially permissible a professional energy audit can often help you save more money by identifying exactly where your building is losing energy. If you would like to have a professional conduct an audit here are a few tips. There are a number of test they may conduct and in order to prepare for them make a list of issues your building has, have copies of your buildings previous energy bills (these can be obtained from your energy provider upon request), then your behaviors will be assessed such as average settings on the thermostat, number of rooms in use. Be sure to stay with the auditor throughout the process and ask any questions that may arise.

You can contact your energy provider or your state or local government to obtain contact information for a professional auditor. Be sure that they use a calibrated blower door; be sure to ask about this while scheduling your appointment.

If a professional is not an affordable option for your company, you can also conduct a do-it- yourself energy audit. This can take time depending on the size of your building but the savings that may result can range from 5% to 30% per year. Instructions on how to conduct this type of audit are available on the Department of Energy web site at the following address:

[http://www.energysavers.gov/your\\_home/energy\\_audits/index.cfm/mytopic=11170](http://www.energysavers.gov/your_home/energy_audits/index.cfm/mytopic=11170).

### Building Shell Weatherization

Caulking and weather stripping your small business can save you money year round. The cost of having leaks can be extremely costly whether you are heating or cooling your building. There are several steps in successfully sealing your building as described in the following chart.

Detecting Leaks	Find areas where materials meet. Such as windows, mail chutes, electric wire entrance, phone line entrance, air conditioners, and vents or fans. If a piece of paper can be passed through any of these areas, you are losing energy. Another option is to hire a technician to conduct a blower door test. This test measures air pressure to determine how leaky a building is.	Air leakage can be found in the following places: Chimney penetration, ceiling fixtures, electrical wire or phones line entrances, water and furnace flues, joints between walls and ceilings, window frames, electrical meters, electrical outlets and switches, and cracks around doors.
Caulking	After leaks have been detected, they need to be sealed. Leaks can be sealed with a caulking compound.	Caulking can be applied to window and doorframes, faucets, ceiling fixtures,

	This is suggested for window and doorframes. Caulking can also prevent water damage in and outside your building.	water pipes, drains, and other plumbing fixtures.
Application of caulking	The following steps along with directions on caulking will eliminate the need to reapply	<ul style="list-style-type: none"> <li>-clean area to be caulked</li> <li>-caulk in continuous stream</li> <li>-assure that caulking sticks to both surfaces</li> <li>- if caulking shrinks or does not adhere to both surfaces reapply</li> </ul>
Weather stripping	Weather stripping should properly seal your window or door when closed and also allow it to open easily. Also, be sure that the depth of the stripping is appropriate.	Apply at bottom and top of window sash and around doorframe/ stop.
Application of weather stripping	To determine quantity of stripping needed measure perimeter of windows and doors and add 5-10%. Always be sure to follow directions on packaging and follow the additional tips here.	<ul style="list-style-type: none"> <li>-clean and dry area where stripping will be placed</li> <li>- measure twice before cutting stripping to avoid waste</li> <li>- apply snugly to both surfaces to create compression when door or window is closed.</li> </ul>
Additional Information	For tools, materials, and more information visit <a href="http://www.eren.doe.gov/">www.eren.doe.gov/</a> <a href="http://www.leeric.lsu.edu/energy/caulking">www.leeric.lsu.edu/energy/caulking</a> <a href="http://remodeling.hw.net/frmArtFrot/">http://remodeling.hw.net/frmArtFrot/</a>	These products can be found at home goods stores, hardware stores, and online.

## Electricity

### *Energy use*

If you have decided to convert to clean energy that is a wonderful first step. Now here are some tips on how to lower your electricity bill even more. If you own any old appliances, consider replacing them with energy efficient ones such as Energy star appliances. In order to determine whether or not your appliances and electronics should be replaced or turned off here is a simple calculation.

$$(Wattage \times \text{Hours used per day}) \div 1000 = \text{daily Kilowatt hour (kWh) consumption}$$
$$(1 \text{ kilowatt (kW)}) = 1000 \text{ Watts}$$

Then multiply this number by the number of days per year you use this appliance or electronic equipment. Then multiply the kWh by your electric providers cost per kWh to find what you are spending per year.

### *Power controlling devices*

Power controlling devices are also a useful option for appliances and electronics. The basic purpose of these types of devices is to regulate the amount of power the appliance receives. They are most effective in older appliances. They can also help to make the appliance more efficient and extend its useful life. You can find such devices at home supply centers and retail centers.

The devices can range from \$30 – to \$60 and can have as little as a 21 month payback period. To find products that are right for your business make a list of your older appliances or those items that use a great deal of energy and bring it to a retailer to see which would be the best fit.

### *Computers*

Many businesses today rely heavily on computers and may leave them running for longer than necessary. The following are some tips to help you determine when to power down and save energy.

- Switch monitors off when not in use for 20 minutes or longer.
- Shut entire computer down when gone for 2 hours or more.
- Use a surge protector or power strip for all computer accessories such as the monitor and printer.
- At the end of the day or when equipment is not in use for more than 2 hours be sure to unplug strip and all other part of the computer, these will continue to draw power even when not in use.
- Switching your computer off can extend its useful life and because electronics produce heat this can be reduced by turning them off which will reduce cooling loads.

If possible enable your computers sleep mode; this will enable the computer to consume 15 Watts less. (Also, note that a screen saver is not an energy saver.)

## Addendum C – Lighting Initiative Steps

### Switch to Compact Fluorescent Light (CFL)

CFL is simply miniature versions of full sized fluorescent. They screw into standard lamp socket and give off light that look just like the common incandescent bulb.<sup>22</sup>

*The benefits of CFL are:*<sup>23</sup>

- **More efficient**  
This kind of bulb is has longer lasting life. It is four times more efficient and it can last up to 10 times longer than incandescent bulb. For comparisons, 22 watt CFL has about the same light output as a 100 incandescent. CFL use 50 to 80 % less energy than incandescent bulb.
- **Less expensive**  
Even though for the first time it will cost more to buy CFL bulb, however for the longer term it will save more money. This is due to the greater efficiency and the durability of the CFL bulb itself. CFL only use 1/3 the electricity and last up to 10 times as long as incandescent. A single 18 watt CFL used in place of a 75 watt incandescent will allow customer to save 570 kWh over its lifetime. At 8 cents per kWh, it equates to a \$ 45 savings.
- **High- quality light**  
Another benefit of CFL bulb is it gives the warm light instead of the cool white light of older fluorescent. CFL use rare earth phosphors for excellent color and warmth. New electronically ballasted CFLs do not flicker or hum.
- **Reduce air and water pollution**  
Replacing a single incandescent bulb with CFL will keep approximately a halt-ton of CO2 out of the atmosphere over the life of the bulb. This is another environmental benefit of the use of CFL bulb. Saving electricity, reduce CO2 emissions, sulfur oxide, and high-level nuclear waste.
- **Versatile**  
CFL bulbs can be applied nearly anywhere that incandescent light are used. It can be used in recessed fixtures, table lamps, track lightning, ceiling fixtures, and porch lights. 3-way CFL bulbs are also available for lamps with a 3-way setting. Dimmable CFLs are available for lights using a dimmer switch as well.

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<sup>22</sup> [http://www.eartheasy.com/live\\_energysave\\_lighting.htm#led3](http://www.eartheasy.com/live_energysave_lighting.htm#led3)

<sup>23</sup> [http://eartheasy.com/live\\_energysave\\_lighting.htm#led3](http://eartheasy.com/live_energysave_lighting.htm#led3)<http://www.google.com/>

**Tips and guidelines for replacing incandescent bulbs with CFL bulb** <sup>24</sup>

- ✓ When buying a bulb, look for the highest lumens-per-watt-ratio. Lumens measure the amount of light a bulb gives off, while watts measure how much energy a bulb uses. A typical lumens-per-watt-ratio for an incandescent bulb is 15:1. This compares to 60 : 1 for a fluorescent bulb
- ✓ For each standard incandescent bulb replaced with CFL, it can save around \$ 10 or more on the electricity cost over the life of the bulb. Consider the following two charts:

<b>Existing</b>	<b>Replace with</b>
60 watt	15 watt CFL
75 watt	20 watt CFL
100 watt	26 or 27 watt
150 watt	30 ultra watt

**Cost Comparison Simulation**

	<b>60 watt incandescent bulb</b>	<b>15 watt CFL</b>
Cost of bulb	\$ 0.75	\$ 6
Hours per day	5	5
Hours per year	1825	1825
Kilowatt-hours per year	110	27
Cost per Year (at \$ 0.12 per kilowatt-hour)	\$ 13.20	\$ 3.24
<b>60 watt reduced to 15 watts = 45 watt reduction</b>		
<b>Cost per Year : \$ 13.20 Reduced to \$ 3.24 = \$ 9.96 per Year</b>		

Clearly, CFL bulbs save money in the long term.

<sup>24</sup> <https://www.powerofaction.com/estlighting/>

### **Tips to be more efficient**

- ✓ Use brighter bulbs in areas where you do close-up work such as reading, working, cooking, and home projects. Use less-bright lights in other less frequented areas.
- ✓ Keep light bulbs and fixtures clear of dust and other particles since they will greatly affect to the gleam of light.
- ✓ Replace outdoor floodlights with halogen lamps, or use motion detectors. A 50 or 90-watt halogen lamp is able to replace a standard reflector bulb that has twice the wattage.
- ✓ Use natural light as much as you can. This can be done by moving desks, reading chairs and workbenches closer to windows.
- ✓ Use lighter colors for house interiors. Lighter colors for walls, ceilings, and floors reflect more sunlight.
- ✓ Using a motion detector will save energy and money since it will turn on only when needed.
- ✓ Exterior lighting is one of the best places to use CFLs because of their long life. For residents that live in a cold climate, such as Woodstock, be sure to buy a lamp with a cold weather ballast since standard CFLs may not work well below 40 degree Fahrenheit.<sup>25</sup>
- ✓ Consider using 4-watt mini fluorescent or electro-luminescent night-lights. Both lights are much more efficient than their incandescent counterparts are. The luminescent lights are also cool to the touch.
- ✓ Consider three-way lamps. It makes it easier to keep lightning levels low when brighter light is not necessary.
- ✓ Use ENERGY STAR labeled lighting fixtures.

### **Conduct a “Bulb Exchange Day”**

To accelerate and encourage residents and businesses to switch to CFL, we recommend that the Green Team conduct a “bulb exchange date.” In this program, The Green Team gathers the information about the number of CFL bulbs needed from residents and businesses. Then, the Green Team should negotiate with local stores to get a price discount; e.g., with the new Wal-Mart 25 Tobias Boland Way, Worcester, MA 01607.

Because these light bulbs are being bought in bulk, it should be possible to get a large discount.

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<sup>25</sup> US Department of Energy : <http://www.energy.gov/lightingdaylighting.htm>

## Addendum D - Useful Tips for Paper Reduction

### In the workplace:

#### *Policy consideration:*

1. **Adopt a "Double-Sided" Policy.** Consider adopting an organizational policy that will ensure all individual documents are printed on both sides of the page.
2. **Minor Hand Written Corrections are OK.** Consider adopting an internal policy allowing internal documents to be submitted with minor legible handwritten corrections. This means it is okay to make neat handwritten corrections to fix typos and punctuation errors, add a word, or delete one, on documents you give to your managers, so long as the document is for internal use. You can save time and paper by making a simple hand correction and by having several people review the same draft, rather than reprinting each successive draft.

#### *Printing Improvements:*

- **Default to Print Double-Sided.** Set up computer software for default two-sided printing including word processing, spreadsheets, electronic mail, and other programs.
- **Preview Documents before Printing.** Proofread documents on screen before printing. Don't forget to use the speller/grammar function to detect errors. Adjust fonts, margins, and spacing to fit more text on a standard sheet. If possible, set a double confirm button to print. Sometimes, we print hundreds of sheets just because a simply mistake click.
- **Print Only the Pages You Need.** You just got back that 20-page report you wrote and there are changes to make on pages 2, 3, 4, 7, and 15. After making the changes, do you print out the whole document? If yes, consider instead printing only the pages you need. Most software programs provide this option under the print function. Consult your information management staff or your software guidebook if you are unsure of how to print selected document pages.
- **Print 4-6 slides on one page.** Nowadays, we all use PowerPoint to illustrate our presentations. Usually, we print them in advance or after to review the context. From the experience of many professionals, printing 4-6 slides on one page is more appropriate to eyesight as well as for saving paper and ink than printing each slide a page.

#### *Reuse:*

- **Provide Trays to Collect and Reuse One-Sided Paper.** Encourage people to save and reuse paper printed on only one side at their desks. Collect paper that has been printed on one side for reuse in copiers and fax machines. Also, use the one-sided paper to make scratch pads—just put single-sided paper face up and secure with a paper clip or binder clip at the top!



- **Provide Trays to Collect and Reuse Envelopes and File Folders.** Encourage the reuse of large envelopes and file folders by providing centrally located trays for their collection. Your office can buy mailing labels with your return address and logo to place over old addresses on envelopes to facilitate their reuse. Always encourage employees to first reuse items such as large envelopes and file folders at their desk.

### ***Reduce***

- **Send Information Electronically.** Use e-mail for forms, document transmittals, and faxes. Think carefully before printing electronic information. Organize and save it so it is easy to look up. This way you won't need to make hard copy files of important information. Do make backups on floppy disks regularly!
- **Reduce Unwanted Mail.** Contact mail senders to take your company's name off their mailing list or mark unwanted first class mail "Refused, Return to Sender." Trim mailing lists used to send information to your customers. Give customers opportunities to indicate if and how often they want to receive information. Your customers will appreciate your efforts to minimize unwanted or duplicated mailings.

### **At home:**

#### **In your kitchen and bathroom:**

- Instead of using paper towels, use rags.
- When using paper towels, stop and think before you use it as to how much you'll actually need.
- Paper plates are evil - consider lightweight bamboo and other reusable crockery made from renewable resources for picnics etc.
- Buy reusable coffee filters.
- Utilize reusable containers instead of paper bags.

#### **In your study room:**

- Use lighter weight graded paper where possible.
- Read newspapers online or only buy newspapers and magazines when you can use the paper for another purpose after you're done.
- Contact pamphlet distribution companies and let them know that you don't want their junk mail in your mailbox. Add a "no junk mail" sticker to your mailbox and lambast any company whose marketing materials still appear!

- Some utilities and banks that provide online account access will discontinue sending you paper statements, invoices, and promotional material if you formally request it.
- Send electronic greeting and postcards instead of paper based ones.
- Most households and businesses are now provided with special recycling bins, but if you don't have one of these; create one of your own. It saves digging through the trash to pull it all out.

**Things to remove from paper before recycling<sup>26</sup>**

<b>Common Contaminants in Paper Recycling Bins</b>	
1	Heavy Metal Fasteners
2	Wrapper For Copy Paper
3	File Folders With Metal Bars
4	Envelope With “Peel And Stick” Adhesive
5	Food Waste, Sandwich Wrappers, Cups, Bottles, Cans, Floor Sweepings.
6	Non-Paper Envelops
8	Restroom Waste (Paper Towels, Tissues, etc.)
11	Glass, wood, and metals (including foil)
12	Plastic films and other plastic materials
13	Medical or hazardous materials
14	Cloth or fabric

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<sup>26</sup> **KENTUCKY RECYCLING MARKET ASSISTANCE PROGRAM**