

## ENERGY & SUSTAINABILITY

### PURPOSE

To take action that will create a sustainable energy future: one that minimizes environmental impact, supports our local economy, and emphasizes energy conservation, efficiency and the increased use of local and regional renewable energy sources.

### BACKGROUND

- **Increasing Awareness:** Recent events – skyrocketing energy prices, global warming, wars in the oil rich Middle East, awareness of "peak oil" concerns, electricity shortages and blackouts, health effects of pollution – have led to an understanding that the sources of energy that we have become so dependent on are not limitless. The reality is that most of our energy comes from non-renewable, finite sources.
- **Increasing Pressure:** The unprecedented and continuing rise in human population (increasing from approximately 1.65 billion to 6 billion over the course of the 20<sup>th</sup> century) creates additional pressures on these resources. If demand continues to increase, our supply of energy will only become scarcer, and more expensive, putting a drain on our economy, and degrading our environment.
- **Dependence on Fossil Fuels:** Currently the Town is highly dependent on imported sources of energy. On average, towns in Vermont consume 74% of their energy in the form of fossil fuels (oil, natural gas, and propane), and another 17% in the form of electricity. And these figures don't even include transportation, which is almost entirely fossil fuel based. Because these non-renewable forms of energy are produced outside our region, most of the money spent on that energy is exported from our local economy.
- **Independence with Local Energy Sources:** Wood, wind, solar, and hydropower offer distinct advantages over non-renewable energy sources. For every dollar spent on fuel wood, for example, only 18-20% of that dollar leaves the local community. The rest remains in our own region, creating jobs and buying goods locally. On the other hand, for every dollar spent on non-renewable energy sources, 85% of that dollar flows out of the community.
- **Long-term Stability:** Once developed, local energy resources are not subject to politically induced shortages, nor to interruptions in the distribution network. In contrast, foreign fuel sources are insecure and unstable, subject to huge price swings, potential terrorist attack and supply shortages beyond our control.
- **Uncertain Electricity Future:** CVPS derives its power from nuclear (51%, Vermont Yankee and Milestone 3), hydro (35%), wood (3.6%), oil (1.7%), cow power (0.1%), sun and "unspecified" sources (8.6%), according to its 2005 annual report. CVPS's contracts with Entergy and Hydro Quebec expire in 2010 and 2012 respectively. Due to volatility in the energy market, future contracts will likely be limited to three-year terms.
- **Transportation Challenges:** Transportation through the Town of Strafford is primarily by private vehicle at this time, with no connection to public transportation. The new Park & Ride

lot is a good step toward encouraging carpooling. Road maintenance and school bus services make up the greatest portion of the Town's energy costs.

## **SUSTAINABLE ENERGY RESOURCES AVAILABLE**

- **Conservation:** The most abundant local energy "source" available to us is conservation. Every kilowatt of electricity we don't use is that much more money in our pockets, that much more money that stays in the local economy. Increased efficiency means more viable businesses and greater economic security. And this is available to us with no reduction in the quality of service or the standard of living, and with no degradation to our natural environment.
- **Wood:** Strafford is largely forested. Prior to the wide-scale use of fossil fuels, all of Strafford was wood heated. Strafford contains enough forested land that it could produce sufficient fuel wood for the entire Town on a sustainable basis. With proper technology, wood can be burned cleanly and effectively.
- **Solar:** Solar power has the potential to provide space heating, water heating, and photovoltaic electricity. Strafford has arguably more active solar per capita than any other town in the country. Approximately 10% of the residents incorporate some form of solar electricity or heat, including households both connected and not connected to the electric grid.
- **Hydro Generation:** There are at least two micro-hydro turbines operating in Strafford, with the potential for several additional small scale sites.
- **Wind:** Two wind turbines operate in Strafford, with the potential for some larger scale wind generators in the Kibling Hill vicinity.
- **Biomass:** By using cow manure, compost and other biowaste, the generation of methane at scale can be used to generate electricity, keeping the methane from otherwise contributing to global warming.
- **Geothermal:** Geothermal energy utilizes the ground's heat to supplement home heating. In conjunction with solar, this technology is viable in the northeast.

## **ENERGY GOALS**

- Encourage energy conservation and efficiency.
- Reduce our dependence on nonrenewable and imported sources of energy.
- Pursue development of local renewable energy resources.
- Reduce energy consumption in all households, school and community buildings and operations.
- Protect and utilize the town's renewable energy resources.
- Support the local economy and encourage 'green jobs'.

## **ENERGY STRATEGY**

Leading by example, we can promote energy efficiency and sustainable living in our households, school and community buildings and operations. We can work to educate, empower and challenge our community and help inspire change and drive innovation.

### **STRAFFORD CAN:**

- Adopt policies and influence local building codes that set targets for energy efficiency goals for lighting, electricity, and heating.
- Monitor state and federal programs aimed at increasing energy efficiency in buildings and increasing use of renewable energy systems; and share this information with builders and home owners.
- Assess, monitor and report the effectiveness of energy efficiency strategies and projects including benefits, achievements and savings to share with taxpayers.
- Initiate a sustainable energy effort in the context of broader sustainable development goals (e.g., smart growth, clean energy initiatives, transportation policies)
- Reduce fossil fuel use by promoting and implement strategies to encourage ridesharing, public transit, bicycling and walking.
- Encourage and support local agriculture and buy local campaigns

## **ENERGY ACTIONS**

### **Energy Efficiency**

- Continue to conduct energy audits and monitor energy use on school and community buildings to identify areas of waste and areas of potential savings for lighting, electricity use and heating; and to determine whether the end-uses of energy are properly matched with the types of energy sources used.
- Adopt full cost accounting and consider energy consumption when planning for town investments in building and infrastructure projects.
- Adopt town purchasing policies for ENERGY STAR equipment and computers
- Require that new homes meet ENERGY STAR homes standards, and encourage use of the LEED for Homes programs.
- Require that developers quantify and evaluate the energy impact of all major proposals.
- Encourage Landlords to bring rental homes up to Town standards for efficiency, especially those in which tenants are responsible for their own heating bills. The town might consider offering a one-time only property tax credit for the purchase and installation of retrofit conservation materials such as insulation, caulking and weather – stripping.
- Continue to sponsor Button Up workshops, and encourage the work of COVER, for weatherization services on homes, with special emphasis on low income housing.

### **Renewable Energy**

- Engage in long range planning for the sustainable use and acquisition of renewable energy.
- Recommend cost effective energy conservation and efficiency measures and modifications that would make permit use of renewable energy.
- Prioritize these modifications and incorporate them into the Town and School's capital budget and implement programs as prioritized by the previous steps.

- Identify areas in town appropriate for community sponsored renewable energy facilities to harness wind, hydro, and solar energy. Pursue plans to develop these renewable resources in partnership with land owners.
- Develop a few demonstration renewable energy projects as models, e.g., a renewable energy elderly housing project, school or community building.

### **Carbon Reduction**

- Pursue smart growth policies for Strafford and South Strafford to provide for senior housing and additional homes and businesses in the villages.
- Examine the town investments to ensure they support the local economy and the sustainable future.
- Encourage the use of clean burning, carbon neutral technologies for households, school and community buildings.
- Help to develop, stimulate, promote and attract local green energy initiatives and businesses as an economic development opportunity;
- Incorporate green initiatives into town personnel training and budgeting.
- Modify requests for proposals, specification and contract language to ensure sustainable energy policies and procedures are an integral part of each project.
- Encourage park and ride, and provide list serve for rides.
- Pursue a bus stop in town, for public transportation access to the region.
- Build bike trails and lanes and provide bike racks. Continue Bike to School days.
- Support local food community suppers.
- Support local food use in the school lunch program.

### **Appendix: From the Governors Commission on Climate Change Vermonters Quick Tips for Carbon Dioxide Reduction**

We must reduce the amount of activity that creates excessive carbon dioxide and other greenhouse gases (GHGs) such as methane. Here's a quick series of tips that all of us can put into action:

#### **TRAVEL**

- Reduce unnecessary short trips in your car. Plan out and combine your daily trips (work, errands, shopping, etc.) so you can maximize your efficiency with the fewest number of trips.
- Remove unnecessary weight from your vehicle; this will cut down fuel consumption and carbon dioxide emissions.
- Improper tire inflation causes your vehicle to use more fuel and wear out your tires more quickly, so make sure all 4 tires are inflated properly.
- Use public transportation wherever possible – if public transit is lacking in your area; express your concerns & ideas to local officials.

#### **HOME**

- If you don't need it, switch it off at the wall or power strip. Appliances running on standby power (such as remote control TVs, computers, stereo equipment, etc.) consume a great deal of energy, unnecessarily even when not in active use.
- Take shorter showers and use the shower instead of the bath (you burn less fuel to heat the water, release fewer GHGs and save gallons and gallons of water too!)
- Turn down the heat a few degrees in winter and don't set the air-conditioning too cold in summer. Do you really need to get around in summer clothes during the winter? Even setting your thermostat up or down a degree or two can make a huge difference in electricity

consumption.

- Recycle and reuse whatever you can. While recycling glass, paper, and cans etc. does require energy to reform new products, it's far less than having to mine, drill or harvest the raw resources.

### **WORK/OFFICE**

- See if you can telecommute (work from home) a day a week. This will save you gas and money and your employers a bit of electricity at the office!
- Talk to your employer about carbon emission reduction strategies e.g. a 'lights off when not in use' policy. Approach it not only from the warm and fuzzy environmental viewpoint, but point out the financial benefits. You never know, you may just get a promotion or a salary raise!

### **GARDEN**

- Don't burn leaf litter - mulch or compost it instead – burning vegetation emits carbon dioxide and other pollutants, which are harmful to your health, into the atmosphere.

### **FOOD**

- Try to buy local, organically grown fruits and vegetables. Some green produce is shipped thousands of miles in refrigerated trucks before it hits your supermarket.
- Cut down a little on red meat – livestock release millions of tons of methane, which is 21 times more potent than carbon dioxide, into the air each year.

### **GENERAL PURCHASES**

- Before buying anything, ask yourself – “Do I really need this?” Rampant consumerism plays a huge role in greenhouse gas emissions. Manufacturing products and packaging materials requires energy, which leads to emissions of carbon dioxide and toxic pollutants. When purchasing, keep “green” close to mind. This reduces GHG emissions and keeps more “green” in your wallet.

### **OFFSET**

- We can't all buy 100% organically and locally produced items that have been created with renewable energy all the time, so try to purchase green tags to help offset carbon dioxide emissions. Rather than being an exercise in futility, offsets and green tags help provide investment capital for renewable energy programs.

### **SOME USEFUL WEBSITES WHERE YOU CAN LEARN MORE**

<http://www.anr.state.vt.us/air/Planning/htm/ClimateChange.htm>

<http://yosemite.epa.gov/oar/globalwarming.nsf/content/actionsIndividual.html>

[http://www.epa.gov/climatechange/emissions/ind\\_calculator.html](http://www.epa.gov/climatechange/emissions/ind_calculator.html)

<http://www.epa.gov/climatechange/wycd/home.html>

<http://www.ctclimatechange.com/WhatCanIDo.html>