

**2007 Massachusetts Envirothon  
Current Issue Problem**

**Energy Conservation & Renewable Energy  
for Massachusetts Communities**

**Background**

Last year the price of gasoline, heating oil, natural gas, and electricity were pinching town and household budgets in your community, and everyone was getting nervous about the way prices were going up, then down, then way up again. At the same time, people in your community were waking up to the reality of climate change and how people contribute to it through our use of energy from fossil fuels.

Your team has been appointed to investigate the energy situation and to develop a plan for your community that includes both short and long term proposals for action. To prepare, you will need to do some investigation using a variety of sources (the library, web sites, town hall records, interviews) to get information. You will need to get out and talk to people and visit places in your community. In your presentation, you will be expected to provide some real numbers and offer informed estimates of how much energy your community uses for different purposes. You will also need to be familiar with renewable energy and energy efficiency technologies.

Mass Envirothon has prepared several resources to help you with your research and presentation (see <http://www.maenvirothon.org/currentissue.htm>). In particular, see the strategies for community investigation beginning on page 10 of *Questions and Resources for Team Preparation*. If you have questions about your research or your presentation, contact Will Snyder ([wsnyder@umext.umass.edu](mailto:wsnyder@umext.umass.edu) or 413/545-3876).

**The Problem**

Our way of life depends on energy from cheap, easily available fossil fuel. But fossil fuels, especially oil, are becoming scarce and more expensive. They are nonrenewable resources. And burning fossil fuels is now recognized as a primary cause of increased carbon in the atmosphere, leading to climate change. The solution to these problems is to use less fossil carbon energy.

Several scientific and economic studies in the past year have recommended that, to stabilize climate, the world's economies must reduce their carbon emissions from fossil fuels by up to 80% by the middle of this century. The sooner we act, the better. ***This is a huge challenge, but it is doable.*** We will need to change the way we live, but our quality of life may improve in the process.

**How should Massachusetts communities respond to this energy challenge? What can be done at the community level to reduce fossil fuel use dramatically to come into line with these recommendations?**

**Specifically, how do you recommend that your community**

- **reduce fossil fuel use by at least 25% in the next five years?**
- **reduce fossil fuel use by an additional 50% by 2050 (for a total of 75%) ?**

**What mix of Energy solutions - renewable energy sources, efficiency, and conservation (including changes in habits and system changes) do you recommend?**

**What will your community be like in 50 years as a result of your recommendations?**

**Some Tips for Your Presentation**

You will be presenting to a panel of five to eight judges. Their job is to listen to your plan, ask good questions, score your presentation, and give you feedback on your research and your proposal. You will have 15 minutes for your presentation, followed by a 10 minute question period.

**Show the judges that you understand the magnitude of the energy issue in your community, and the changes that will be required.**

**Show the judges how you know what you know:**

- Show that you have taken the time to understand energy technologies that you are recommending
- When describing current or future energy use, include real numbers and where you found them. Where you use estimates, show how you arrived at them.
- Provide evidence of first hand investigation in your community, including interviews and site visits. Tell them who you talked to, where you visited, what you found.
- Cite your web and library sources, and describe where you found them and how you evaluated them.

**Use maps and other visual aids to introduce your community, explain the issues, and dramatize your points.**

**Be creative and positive!** Provide a vivid description of what your community will be like in 50 years as a result of your plan. Can you use such a description to get your fellow citizens to support your plan?

**In your presentation, you should:**

**Introduce the community and its energy use**

- Delineate your “community” clearly. In most cases, this will be your municipality.
- Describe the community and how it uses energy today, including some real numbers (citing sources) and well-reasoned estimates of energy use
- Provide some history of energy use and energy issues in the community
- Provide information about any current use of renewable sources or major conservation/efficiency efforts
- Introduce the people who are currently researching, planning, and taking action on community energy issues

**Describe the community’s energy opportunities**

- Introduce opportunities in the community for 1) renewable energy production, 2) energy efficiency, and 3) energy conservation (including changes in habits and system changes)
- Describe further research, policies, or actions beyond the community that would be helpful

**Present your recommendations for a community energy plan**

- Outline specific action steps to reduce fossil fuel use by 25% in 5 years, and by 75% (total) by 2050
- Explain your reasons for the mix of renewables, efficiency, and conservation that you are recommending, and the changes that will be required. What are the best ways to have a big impact with the least effort?
- Recommend ways to ensure broad public involvement in making the changes (including high school students)
- Provide vivid description of the community in 50 years (how people will live, how the landscape will look)

## **Special Notes!!**

**Community Awards:** If you do a thorough job in your Current Issue investigation, you will not only score well but you can qualify for Mass Envirothon's Community Research Award. And if you take what you learn and apply it in service to your community, you can qualify for Mass Envirothon's Community Action Award. See <http://www.maenvirothon.org/community.htm> for details.

**Roundtables:** At lunch time on the day of the Envirothon, ALL Envirothon teams are invited to share their Current Issue or other work informally with other teams and interested adults at the "roundtables" session. It's easy and fun: Just bring the display materials from your presentation and be prepared to start a conversation about what your team learned from your community explorations and/or service projects. You can also be more creative: Introduce us to your community. Show off your research prowess. Inspire us with another project that you have been involved with. Click on "roundtables" at <http://www.maenvirothon.org/event06.htm> for more information. (Offering a roundtable is on the official "to do" list for teams pursuing the Community Awards, but *everyone is invited to join in.*)