

2024 Current Issue

Vermont Envirothon – 2024 Current Issue Renewable Energy for a Sustainable Future

Welcome to the 2024 VT Envirothon Current Issue:

While exploring this year's topic, you will learn about the different sources of renewable energy; the challenges facing the transition from traditional fossil fuels to renewables; the environmental, economic, and social impacts of energy consumption; and how individuals can affect change in their communities. You will learn how this all pertains to Vermont and specifically to you and your community.

To prepare for this year's Current Issue, you should read the NCF Envirothon's 2024 Study Resources. These will give you a strong understanding of the overall topic. You will then focus on these VT-specific topics:

- The percentage of VT's total energy used by which sectors – residential, transportation, industrial, commercial.
- How much of VT's total energy is generated in-state and what the sources of it are.
- How much of VT's total energy is generated out-of-state and what the sources of it are.
- How much of VT's total energy is from renewable sources? Non-renewable?
- Non-renewable Energy
 - What are the main sources of non-renewable energy? Which of them are used in VT?
 - What are the downsides of using non-renewable energy?

- Is nuclear energy renewable or non-renewable? What are some pros and cons of using it?
- Renewable Energy
 - What are the different sources of renewable energy? Which are used commonly by Vermont's power companies?
 - Are there renewable energy sources in your community on either a residential scale or larger? Are any in the works?
 - What are the downsides to using various renewable sources? Include biofuels like methane, and wood as well as hydro, geothermal, solar and wind. Consider siting issues, land-use issues, health issues, impact on town services and other concerns.
 - Do any of these renewable energy sources produce greenhouse gases?
 - What are the VT Renewable Energy Standards? Some environmental groups think they need to be tightened up; some groups think they should be loosened.
- Personal/family/team/school energy use
 - What energy sources do you use in your own homes for heating, electricity, cooking, transportation? (wood, natural gas, propane, electricity, solar, geothermal and/or other sources). Figure out how much your family (or your team) relies on renewable energy vs. non-renewable energy to keep your homes warm, lights on and for transportation.
 - What power company supplies your electricity? How much of it comes from renewable sources?
 - Do any of your families generate their own solar, wind or geothermal?
 - What are your school's energy uses and sources?
- The environmental, economic, and social impacts of energy consumption. Focus on VT and your community. Also consider equity issues such as the impact on people who are poor, elderly,

more rural and/or immigrants. They may live in poorly insulated housing and may be dependent on older gas guzzling cars.

- The challenges facing all of us in the transition from traditional fossil fuels to renewables. Focus on Vermont and your community. What incentives (financial and otherwise) are offered to Vermonters trying to make this transition? Be sure to include transportation. How can all sorts of people find out about these programs?
- How you can, personally or as a team, affect change in your communities. Is there a town energy committee in your town? What do they do? Ask your town clerk or regional planning commission for the name of someone interested in energy in your community. Reach out to them to find out what people in your community are doing about energy issues. What about people who are more challenged? Can you help the Energy Committee, help create one or take other action to assist your community in the transition to more sustainable energy use? Does your town have an Energy Plan? Your Town Clerk and Regional Planning Commission can help you with this information. Can you influence your school's energy use, its sources of energy, the school budget for energy or in some other way? How can you reduce your personal/school/community's impact of vehicles' use of fossil fuels?

Your Challenge:

On the day of the Envirothon...

On the day of the Envirothon, your team will have 20 minutes in front of a panel of judges. 15 minutes is for you to present your work and the last five minutes are to answer questions from the panel. Everyone on your team should help present your work and be able to answer

questions. A month or two before the Envirothon, your team will receive a copy of the rubric the judges will use to assess your work. This will help you fine-tune your efforts – but don't wait for it to get started!

Your presentation should include:

Overview

- Describe the connection between the use of fossil fuels and the changing climate.
- Explain why so many nations want to keep using fossil fuels and why it is so difficult to move away from them.
- Describe other sources of energy and why, or why not, they might be useful substitutes for fossil fuels.

Vermont

- Explain the main energy sources for VT and how they get to Vermonters.
- Describe the VT Renewable Energy Standards. Explain why and how some groups want to change them.
- List some incentives, financial and otherwise, Vermonters have for changing to renewable energy sources.
- List some of the drawbacks or roadblocks to making these changes.
- Explain some of the impacts of using non-renewable energy sources on VT's environment including wildlife, forests, soils and aquatic ecosystems. Explain some of the environmental impacts of shifting to and using renewable energy sources.
- Describe some of the social and economic impacts, including equity issues, of our current sources and uses of energy and how these might change if energy sources were more renewable.

Your Community, Families and School

- Explain where your community/school/families get energy for heating, cooking, electricity and transportation. Explain how much of it is considered renewable energy.
- Describe what efforts have been made to consider changing to more renewable sources. If none, explain some of the reasons it isn't being considered or implemented.
- Describe what actions your team has taken to help with the transition to renewable energy use in your personal lives, your town and/or your school.

Looking forward

- Explain what you think Vermont's renewable energy use and sources will look like in 2050.
- Explain what you think are the most important considerations for deciding what energy sources VT should invest in.