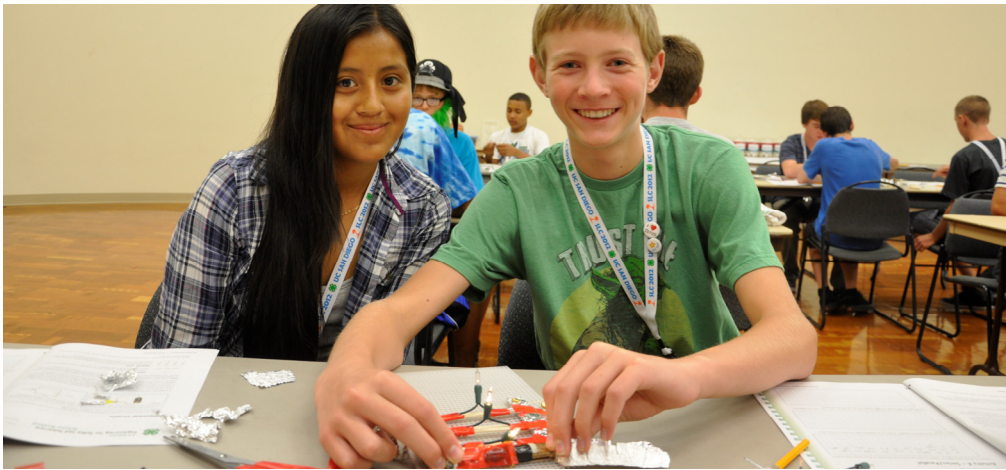




4-H ENERGY PROJECT



Energy is a fundamental crosscutting concept in science and is a social and environmental concern as demand for energy increases globally. In the 4-H Energy project, members may explore a variety of topics, including:

- Types of energy, including thermal (heat), chemical, magnetic, elastic, electrical, sound, radiant, mechanical, nuclear, and luminous, and how they may be transformed.
- Practice and promote wise use of energy, taking into consideration social, economic, environmental, and political considerations.
- Develop an understanding of energy production and the social, political, and economic costs between petroleum (oil), natural gas, coal, nuclear, and renewable sources.

Starting Out *Beginner*

- Learn about forms of energy and transformation from one form to another.
- Explore how much energy is needed to perform certain tasks (i.e., energy usage).
- Start to experience the flow of energy into and out of a system.
- Understand the production, selection, use, conservation and safe handling of energy.

Learning More *Intermediate*

- Explore the ways humans use and generate energy and how that has changed over time.
- Learn about renewable energy sources (sunlight, wind, rain, tides, water, and geothermal heat).
- Develop an appreciation and respect for the environment, rights and property of people and human responsibility in the production and use of energy.

Exploring Depth *Advanced*

- Explore energy generation and the cost/benefits of various sources of energy.
- Learn about the impact of energy production on climate change.
- Learn about sustainable energy and energy efficiency.
- Conduct a community energy assessment and develop a service learning plan to save energy.

The activities above are ideas to inspire further project development. This is not a complete list.

4-H THRIVE

Help Youth:

Light Their Spark

A spark is something youth are passionate about; it really fires them up and gives them joy and energy. Help youth find what it is that excites them.

Flex Their Brain

The brain grows stronger when we try new things and master new skills. Encourage youth effort and persistence to help them reach higher levels of success.

Reach Their Goals

Help youth use the GPS system to achieve their goals.

Goal Selection: Choose one meaningful, realistic and demanding goal.

Pursue Strategies: Create a step-by-step plan to make daily choices that support your goal.

Shift Gears: Change strategies if you're having difficulties reaching your goal. Seek help from others. What are youth going to do when things get in their way?

Reflect

Ask project members how they can use their passion for this project to be more confident, competent and caring. Discuss ways they can use their skills to make a contribution in the community, improve their character or establish connections.



Expand Your Experiences!

Science, Engineering, and Technology

- Build an object that converts one form of energy to another; assess its efficiency.
- Conduct an experiment with light bulbs to see how much energy each consumes.
- Learn the history of energy generation technologies.
- Go on a field trip of an electrical generation plant.

Healthy Living

- Learn how your body uses and transforms energy—how many steps would it take to power a light bulb? How efficient is your body at transforming energy?
- Explore the *calorie* unit of energy, what it means, and its relation to your body and health.
- Conduct an assessment of the impact of energy production on the environment.

Citizenship

- Conduct an energy assessment of your community and present your findings to the city council; encourage them to explore more renewable sources of energy production.
- Start a recycling campaign for old sources of energy, like batteries.
- Inform the public about ways to reduce energy consumption.

Leadership

- Become a junior or teen leader for the 4-H Energy Project.
- Be a role model in reducing your electricity usage at home, school, and 4-H meetings.
- Learn about the complex roles of social, economic, political, and environmental factors involved in energy generation.

Resources

- Cornell—4-H Youth & Energy nys4h.cce.cornell.edu/about%20us/Pages/4-HEnergy.aspx
- Renewable Energy Scavenger Hunt www.4-h.org/WorkArea/DownloadAsset.aspx?id=4242
- Energy Literacy: Essential Principles and Fundamental Concepts for Energy Education energy.gov/eere/education/energy-literacy-essential-principles-and-fundamental-concepts-energy-education
- U.S.D.E.—Energy Education <http://www1.eere.energy.gov/education/lessonplans/>
- Energy Library <http://theenergylibrary.com/>
- National Academies– Energy needtoknow.nas.edu/energy/
- U.S. Energy Information <http://www.eia.gov/state/>

Connections & Events

Presentation Days – Share what you’ve learned with others through an energy-related presentation.

Field Days – At these events, 4-H members may participate in a variety of contests related to their project area.

Contact your county 4-H office to determine additional opportunities available, such as a field day.

Curriculum

- **Power of the Wind** www.4-h.org/resource-library/curriculum/4-h-the-power-of-the-wind/
- **4-H National Youth Science Days**—Biofuel Blast (2009) and Wired for Wind (2011) http://4h.ucanr.edu/Projects/SET/NYSD/2009_4-H_NYSD/
- **4-H Biodiesel Curriculum** web.cals.uidaho.edu/biodiesel/4-h-curriculum-for-ages-8-12/

4-H Record Book

4-H Record Books give members an opportunity to record events and reflect on their experiences. For each project, members document their personal experiences, learning and development.

4-H Record Books also teach members record management skills and encourage them to set goals and develop a plan to meet those goals.

To access the 4-H Record Book online, visit www.ca4h.org/4hbook.

The UC 4-H Youth Development Program does not endorse, warrant, or otherwise take responsibility for the contents of unofficial sites.

