



## Learning for Clean Energy Innovation

### A Professional Development Opportunity for Connecticut Teachers

#### What is Learning for Clean Energy Innovation (LCEI)?

The Connecticut State Department of Education has incorporated “**alternative energy sources**” into the 9th grade **core science curriculum framework**. The Clean Energy Finance and Investment Authority (CEFIA) recognizes this as an opportunity to support and foster clean energy education in the state. LCEI is a solar energy and wind energy education program targeting the 9th grade CT science framework.

#### The Goal of the LCEI Program

The LCEI program’s main goal is to provide teachers with professional development sessions on solar energy education and wind energy education aligned with Connecticut’s **science framework** concerning “**alternative energy sources**” (9th Grade Strand I - Energy Transformations). The program will educate Connecticut teachers on how to incorporate specially designed alternative energy lessons into their existing curriculum. The LCEI unit utilizes a data monitoring system developed by Heliotronics, Inc. that is linked to solar arrays on qualified schools located across the state. The real-time data can serve as the basis for inquiry investigations that explore solar energy resources in Connecticut, as well as methods of addressing environmental, economical and technological issues at the local level.

#### LCEI - Solar and Wind Education

The solar and wind energy lessons in the unit are aligned with the Connecticut **core science curriculum framework** and are modeled after the curriculum embedded tasks for the **energy transformations** strand of the 9th grade standards. The activities in the unit fit easily into classroom lessons involving scientific inquiry and the scientific method. They will help address several of the **9th grade content standards of the Connecticut core science curriculum framework** including:



- 9.1 Energy cannot be created or destroyed; however, energy can be converted from one form to another.
  - D3 - Describe energy transformations among heat, light, electricity and motion.
- 9.2 The electrical force is a universal force that exists between any two charged objects.
  - D4 - Explain the relationship among voltage, current and resistance in a simple circuit
  - D5 - Explain how electricity is used to produce heat and light in incandescent bulbs and heating elements.
- 9.3 Various sources of energy are used by humans and all have advantages and disadvantages. *Alternative energy sources are being explored and used to address the disadvantages of using fossil and nuclear fuels.*
  - D9 - Describe the availability, current uses and environmental issues related to the use of hydrogen fuel cells, wind and solar energy to produce electricity.

The **solar education unit and wind energy education unit** was developed in consultation with the State of Connecticut Department of Education, a professional development working group consisting of education experts from Connecticut, an education consultant, and the National Renewable Energy Laboratory (NREL).

### Program Eligibility

CEFIA is sponsoring training sessions for teachers which focus on LCEI Solar and Wind education. These sessions are lead by presenters from PIMMS (the Project to Increase Mastery in Mathematics and Science) and are held at various times throughout the year. There are no costs to teachers and participants receive CEU's and equipment to use in their classrooms. Individual school districts may also arrange for teacher training sessions to be held in their facilities with prior arrangement through the Program Director.

### What Schools are Testing the Solar Unit?

To date more than 150 teachers have participated in training workshops in the wind and/or solar units. Their response has been very positive, which is reflected in the feedback from classroom application and the students' reaction to the activities and equipment.



Currently the program is looking to expand to include additional hands-on, inquiry based activities and add curriculum materials to the present wind and solar offerings.

### The Clean Energy Finance and Investment Authority

CEFIA was created by the Connecticut General Assembly in 2011. It is the successor organization to the Connecticut Clean Energy Fund. CEFIA's mission is to promote, develop and invest in clean energy and energy efficiency projects in order to strengthen Connecticut's economy, protect community health, improve the environment, and promote a secure energy supply for the state. As the nation's first full-scale clean energy finance authority, CEFIA will leverage public and private funds to drive investment and scale up clean energy deployment in Connecticut.

CEFIA's main goals are to:

- create clean energy supply for Connecticut;
- accelerate the development of clean energy and energy efficient technologies; and
- educate Connecticut consumers about the benefits and availability of clean energy.

### The Next Workshop Training

Several workshops are being scheduled for teachers across Connecticut. Each workshop offers training and materials in addition to Continuing Education Credits (CEU's) for all participants from the Municipal Clean Energy Pledge.

To sign up for a summer solar energy workshop, or to host a workshop in your district, please contact Jocelyn Anastasiou at 860-257-2882 or email [jocelyn.anastasiou@ctcleanenergy.com](mailto:jocelyn.anastasiou@ctcleanenergy.com).

For more information on LCEI please visit [www.ctcleanenergy.com/LCEI](http://www.ctcleanenergy.com/LCEI).



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