



## FOCUS ON SOLAR Grades 9-12

**NYSERDA**

**ENERGY SMART  
STUDENTS PROGRAM**

### Workshop Objectives

- Develop a basic understanding of solar energy, dispelling common myths about PV, and learn how it can reduce the environmental impacts of our energy consumption.
- Perform activities showing how solar energy is transformed to electricity, through a process called photovoltaics (PV), using the lessons on the School Power ... Naturally<sup>SM</sup> website.
- Empower students to teach their families practical uses for PV and consider careers in PV.
- Become familiar with the services offered by NYSERDA.

### Agenda (6 contact hours)

#### Welcome, Introduction & Framing the Day

Solar PowerPoint presentation - this entire presentation is on the website for you to download and use at your convenience – [www.GetEnergySmart.org](http://www.GetEnergySmart.org)

#### Introduce the Materials

- This is not a whole curriculum.
- The School Power...Naturally<sup>SM</sup> program includes 64 lessons that are correlated one or more of the New York State Learning Standards for students in grades 5 through 12. Each activity can be found on the CD and the School Power ... Naturally<sup>SM</sup> website.
- For many of the lessons, you will see a sun symbol near the lesson title. This alerts you that these lessons make use of the [Performance Data](#) from the fifty schools participating in the program. These schools have PV systems and data monitoring equipment.

#### Energy Overview

Review some facts about energy sources and usage in New York vs. the U.S.

#### Some Background in Solar

Basics in how solar energy can be converted to electricity.

#### Demonstrating the Lessons

- SPN LESSON #28: Series or Parallel?
- SPN LESSON #10: Solar Energy in New York
- SPN LESSON #23: Photoelectric Effect in Photocells
- SPN LESSON #26: Orienting a Photovoltaic Cell
- Introduction to the School Power Naturally Solar Learning Lab<sup>TM</sup> Virtual Array Tour: Lesson 4 in the Series
- Solar Kit LESSON #13: Solarize a Toy
- Solar Kit LESSON #12: Calibration Curve for a Radiation Meter
- Building a Solar House

**Pulling It All Together**

- How can you integrate some or all of these activities into your classroom?
- What ideas do you have to collaborate with another teacher/department in your school to teach PV and energy education?
- How can you inspire your students to learn more about PV and alternative energy?

**Incentive and Competition Opportunities**

- Igniting Creative Energy (ICE) – national K-12 student competition, sponsored by NEF.
- \$500 mini-grants for teachers (Visit our website [www.GetEnergySmart.org](http://www.GetEnergySmart.org) for details and deadlines.)

**Final Housekeeping Issues**

- Survey, sign out, professional development certificate, and explain sub stipend process (if necessary).
- Become an Energy Ambassador! Tell others about what you learned here today. Recommend other NYSERDA workshops.

ABCs of Energy for Grades K-3

4Es of Energy for Grades 4-6

Energy Trilogy for Grades 7-12

Focus on Solar for Grades 5-8

[www.GetEnergySmart.org](http://www.GetEnergySmart.org) and [www.schoolpowernaturally.org](http://www.schoolpowernaturally.org)

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