

INTERNEF

NEWS OF THE NATIONAL ENERGY FOUNDATION

SUMMER 2012 – CULTIVATING AND PROMOTING AN ENERGY LITERATE SOCIETY

DTE Expansion Boosts NEF Michigan Effort

DTE Energy and National Energy Foundation (NEF) have partnered to bring **THINK! ENERGY** to teachers and students throughout the DTE service territory. DTE, a Detroit based utility providing both natural gas and electricity to Michigan consumers, is expanding its support of the **THINK! ENERGY** program as a part of a commitment to educating students and their households on energy awareness and management. The program promotes energy efficiency and delivers real energy savings.

A pilot program was implemented in 2010 and 2011, with over 4,000 Michigan students and teachers participating. Based on the pilot's success, DTE determined in the spring of 2012 to expand the program throughout its combined gas and electric territory, with additional program growth in the works.

NEF's Michigan programs have been anchored since 2009 by Consumers Energy, with Efficiency United and DTE joining in 2010. The programs have been a source of employment opportunities in Michigan.

A local staff has been key in presenting energy education to thousands of young people across the state.

With the growth to the DTE program and to better serve Michigan educators, NEF has opened a new Detroit area office that will serve as the statewide hub for implementation. Janet Salley is the office manager while Tammi Phillippe and Tanya Hill are program coordinators. All three women have previously worked in the programs and will bring experience and professionalism to their leadership of the staff.

The Michigan Department of Education serves the **THINK! ENERGY** programs in a consulting role ensuring that the instructional presentation and materials are correlated to the Michigan Grade Level Content Expectations for grades four and six. This collaborative partnership assists the partners in providing relevant educational support to educators. Students learn that energy efficiency is not only good for the environment, but can be fun and interesting as they are empowered to make a difference in their families' energy use.

The DTE expansion takes the Michigan programs to a new level of service to teachers, students and their households. Thank you to DTE Energy for their commitment to energy education and their communities.



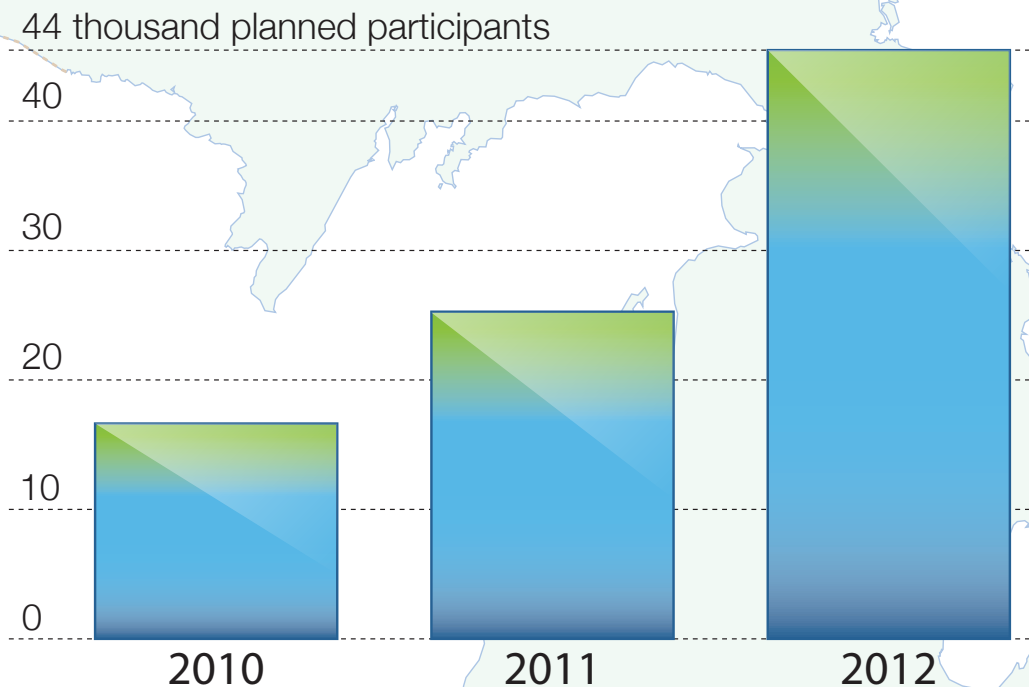
Record Numbers in Michigan

NEF is proud to partner with multiple energy providers in Michigan to increase the number of students and teachers reached by **THINK! ENERGY** this year. The Michigan growth is not limited to the new DTE program; Consumers Energy, Lansing Board of Water and Light (BWL) and Efficiency United (EU) have also expanded the scope of their **THINK! ENERGY** programs.

In addition to Consumers Energy's existing program, they are joining BWL in extending the opportunity to an additional 1,250 teachers and students. The two utilities teamed up for students who receive natural gas service from Consumers Energy and electricity service from

BWL. The partnership allows these students to receive energy efficiency technologies and energy efficiency education that save both electricity and natural gas.

The enthusiasm for energy efficiency in Michigan is further emphasized by Efficiency United, a collaboration of small utilities from throughout the state, who continue to sponsor **THINK! ENERGY**. The **THINK! ENERGY with Efficiency United** program will reach over 2,700 students this year. In all, the Michigan programs will have a combined 44,000 participants; a new record for the state of Michigan and also NEF.



Michigan students participating in the **THINK! ENERGY** program

NEF's Conference Attendance

National Energy Foundation is attending energy conferences all over the country. The wide range of energy related topics help NEF to keep our program materials and curriculum current. Renewable energy, energy efficiency, oil and gas, and unconventional fuels are just a few of the topics covered in the past six months. Increasing conference presence allows NEF to keep a finger on the pulse of the energy industry. Meeting other energy experts to share strategies and information helps create a comprehensive approach to accomplishing our mission of “promoting an energy literate society.”

Conferences Attended

Energy efficiency conferences

- Midwest Energy Efficiency Alliance, January 11 – 14, 2012, Chicago, IL
- Association of Energy Service Professionals, May 15 – 17, 2012, Baltimore, MD

- Northeast Energy Efficiency Partnership, June 14 – 16, 2012, Stamford, CT

Oil, gas and mining conferences

- University of Utah Unconventional Fuels Conference, May 15, 2012, Salt Lake City, UT
- Rocky Mountain Coal Mining Institute, May 17 – 18, Price, UT
- Interstate Oil and Gas Compact Commission, June 3 – 6, 2012, Vancouver, BC

Other conferences

- Milford Renewable Energy Fair, April 28, 2012, Milford, UT
- Edison Electric Institute, June 3 – 6, 2012, Orlando, FL
- National Energy and Utility Affordability Conference, June 11 – 13, 2012, New Orleans, LA



Ian Wright at the Midwest Energy Efficiency Alliance conference (left) and the Utah Genius Awards ceremony (right)

New Nuclear and Water Posters

National Energy Foundation is pleased to announce revisions of two popular educational posters. NEF's *Water* and *Nuclear* posters have been updated. Both posters have new art on the front and eight new, one-page panels of curriculum on the back.

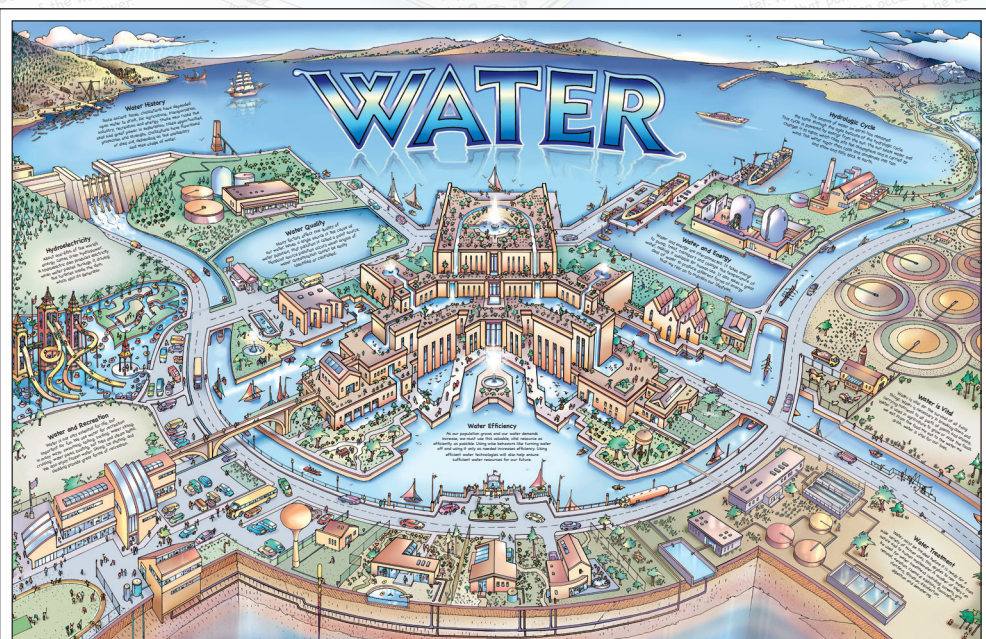
The front of the posters demonstrate the newest technologies and science in water and nuclear fields. These posters take difficult subject matter and make it easily understandable for students, teachers and parents. Each poster is a stand-alone informational piece; a class will get a great overview of the topics with just these posters alone.

NEF would like to extend gratitude to Luke Bockewitz,

from ComEd and Elizabeth McAndrew-Benavides from Nuclear Energy Institute for providing their expertise in revising the *Nuclear* poster. Also, NEF would like to extend appreciation to professional engineer J. Holland Scott for providing his expertise in the revision of the *Water* poster.

NEF undertakes curriculum revisions every year to remain current and provide the best quality energy education available. New art and updated information will assure that these two posters will continue to be effective and informative!

Be sure to check out the new online NEF store at store.nef1.org.



Water in the Earth

The water cycle is a continuous process that moves water through the atmosphere, land, and oceans. It is essential for life on Earth.

Water Treatment

Water treatment is a process that removes impurities and contaminants from water to make it safe for drinking and other uses.

Water and Energy

Water and energy are closely linked. Water is used to generate electricity, and electricity is used to pump water.

Water Efficiency

Water efficiency is the practice of using water in a way that conserves it. This can be done in many ways, such as by using low-flow fixtures.

Water in the Home

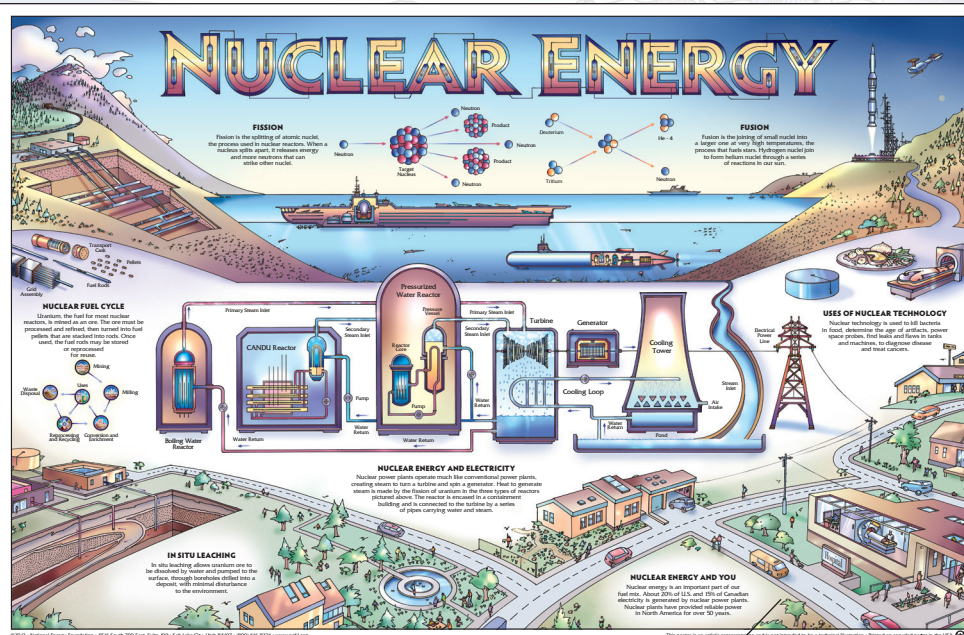
Water is used in many ways in the home, from drinking to cleaning. It is important to understand how water is used and how to conserve it.

Water Quality

Water quality is the condition of water in terms of its chemical, physical, and biological characteristics. It is important to maintain good water quality.

Hydro About energy A hydroelectric when the

Water important in many ways cruising, we also



Nuclear Basics

The world of atoms, molecules, particles and reactions. Atoms can use different numbers of protons and neutrons to form different elements. The number of protons in the nucleus of an atom is called the atomic number. The number of neutrons in the nucleus is called the mass number. The sum of the atomic number and the mass number is called the atomic weight. The atomic weight of an element is the average of the atomic weights of all the isotopes of that element. The atomic weight of an element is a constant. The atomic weight of an element is a constant. The atomic weight of an element is a constant.

How is Nuclear Energy Released From the Atom?
The nucleus of an atom is made of protons and neutrons. The protons and neutrons are held together by a force called the strong force. The strong force is a very strong force. The strong force is a very strong force. The strong force is a very strong force.

Plasma
The ability of atoms, fission reactions using uranium as the fuel, nuclear fusion reactions using deuterium and tritium as the fuel, and nuclear fusion reactions using deuterium and tritium as the fuel.

History of Nuclear Energy

1784 - 1868 Lavoisier and Laplace use the Measure of an Atom
Lavoisier and Laplace use the measure of an atom to determine the atomic weight of an element. Lavoisier and Laplace use the measure of an atom to determine the atomic weight of an element. Lavoisier and Laplace use the measure of an atom to determine the atomic weight of an element.

1869 - Mendeleev's Periodic Table of Elements
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1915 - Rutherford's Discovery of the Proton
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1927 - Chadwick's Discovery of the Neutron
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How Nuclear Power Works

Nuclear energy is the energy of atomic nuclei. The nucleus of an atom is made of protons and neutrons. The nucleus of an atom is made of protons and neutrons. The nucleus of an atom is made of protons and neutrons.

What is a Core Reactor?
A core reactor is a reactor that uses a core of fuel. A core reactor is a reactor that uses a core of fuel. A core reactor is a reactor that uses a core of fuel.

What is a Reactor Core?
A reactor core is a core of fuel. A reactor core is a core of fuel. A reactor core is a core of fuel.

What is a Nuclear Reactor?
A nuclear reactor is a reactor that uses a core of fuel. A nuclear reactor is a reactor that uses a core of fuel. A nuclear reactor is a reactor that uses a core of fuel.

Radiation and You

Radiation is the energy of atomic nuclei. Radiation is the energy of atomic nuclei. Radiation is the energy of atomic nuclei. Radiation is the energy of atomic nuclei.

What is Radiation?
Radiation is the energy of atomic nuclei. Radiation is the energy of atomic nuclei. Radiation is the energy of atomic nuclei. Radiation is the energy of atomic nuclei.

What is a Radiation Source?
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What is a Radiation Detector?
A radiation detector is a detector of radiation. A radiation detector is a detector of radiation. A radiation detector is a detector of radiation. A radiation detector is a detector of radiation.

Nuclear Power Safety

Nuclear power is a safe and reliable source of energy. Nuclear power is a safe and reliable source of energy. Nuclear power is a safe and reliable source of energy. Nuclear power is a safe and reliable source of energy.

Designing the Reactor
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Construction of the Reactor
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Operation of the Reactor
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Uses of Nuclear Technology

Nuclear technology is used in many ways. Nuclear technology is used in many ways. Nuclear technology is used in many ways. Nuclear technology is used in many ways.

Medical Uses of Nuclear Technology
Medical uses of nuclear technology include diagnosis and treatment. Medical uses of nuclear technology include diagnosis and treatment. Medical uses of nuclear technology include diagnosis and treatment.

Industrial Uses of Nuclear Technology
Industrial uses of nuclear technology include power generation and process control. Industrial uses of nuclear technology include power generation and process control. Industrial uses of nuclear technology include power generation and process control.

Research Uses of Nuclear Technology
Research uses of nuclear technology include basic research and applied research. Research uses of nuclear technology include basic research and applied research. Research uses of nuclear technology include basic research and applied research.

The Nuclear Fuel Cycle

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Uranium Mining
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Uranium Conversion
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Enrichment
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Nuclear Energy Careers

Nuclear energy careers are a variety of careers. Nuclear energy careers are a variety of careers. Nuclear energy careers are a variety of careers. Nuclear energy careers are a variety of careers.

Engineering
Engineering is a career in engineering. Engineering is a career in engineering. Engineering is a career in engineering. Engineering is a career in engineering.

Science
Science is a career in science. Science is a career in science. Science is a career in science. Science is a career in science.

Management
Management is a career in management. Management is a career in management. Management is a career in management. Management is a career in management.



Customization Opportunity

NEF has the ability to create a custom version of posters or materials by prominently displaying a sponsor's logo. These posters, along with most NEF materials, are adaptable to fit sponsors' or customers' needs. Some recent materials collaborations have been with Georgia Power, Gulf Power, Johnson Controls, Inc. and NYSERDA among others. A custom poster is a great

way for a utility or any other company or organization to demonstrate commitment to community and education.

For further information about customizing for your organization, please contact Ian Wright at 800-616-8326 or by email at ian@nef1.org.



is Vital
survival of all living
breaking down
of plants and animals
to raise the water level
for lives.

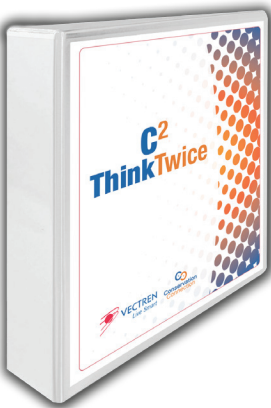
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New Employee Program

C² Think Twice

Adding to a long-standing and effective partnership, Vectren and NEF have implemented a new adult education program, C² Think Twice. Employees of Vectren Energy in Indiana are training on a range of subjects related to energy efficiency. C² Think Twice puts in place procedures for “E-Team Captains” who are trained to be energy managers around their offices and homes.

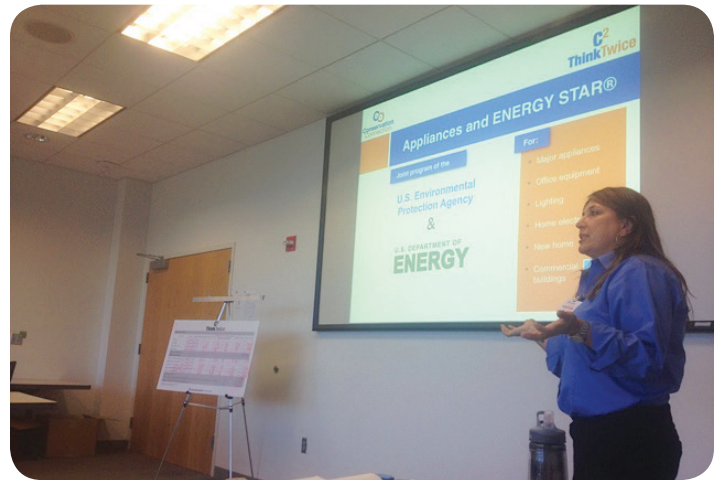
Each of six trainings will have a different theme and focus. Subjects cover furnace fundamentals, transportation, appliances, water, lighting and weatherization to form a comprehensive energy efficiency education program. The E-Team Captains each receive an information guide with activities that will help Vectren employees use less energy.



This new guide is customized for Vectren employees and has a section dedicated to each training. Every section has an energy challenge to make participation

more fun and interesting. For example, in June, employees were encouraged to record their plug loads and energy use and measure what potential impact a Smart Strip® power strip would have on total energy usage.

In all, over 550 Vectren employees will be trained on maximizing efficiency with energy usage at home and in the workplace. NEF appreciates the opportunity to partner on Vectren’s C² Think Twice initiative.



Elissa Richards presenting at a Vectren training session

NEF Announces New Chairman



Marvin S. Fertel

National Energy Foundation announces Marvin S. Fertel, president and chief executive officer at the Nuclear Energy Institute (NEI), as its new chairman of the board of directors.

Mr. Fertel has led NEI since 2009 and previously had been the organization’s chief nuclear officer for six years. He has more than 40 years of experience in consulting electric utilities on issues related to designing, siting, licensing and managing both fossil fuel and nuclear energy facilities.

Prior to his responsibilities with the Nuclear Energy Institute, Mr. Fertel worked as an executive with organizations such as Ebasco, Management Analysis

Company and Tenera. He joined the U.S. Council for Energy Awareness in 1990 as Vice President of Technical Programs and in 1994 became Vice President of Nuclear Economics and Fuel Supply for NEI. He directed industry-wide efforts to ensure exceptional levels of security at nuclear power plants and to address technical issues related to commercial nuclear energy facilities.

Mr. Fertel has an extensive background in many different aspects of the energy industry. He is a member of the Department of Energy’s Nuclear Energy Research Advisory Committee and the U.S. Chamber of Commerce’s Committee of 100 leading executives. National Energy Foundation would like to thank Marvin S. Fertel and welcome his leadership as its new chairman.



Congratulations Contest Winners

Energy by Design

Energy by Design (EBD) is a poster contest sponsored by Nicor Gas in Illinois for students from kindergarten through grade eight. The goal of EBD is for students to demonstrate environmental stewardship through a creative process. There were 1,261 student projects entered from 165 teachers. All of the students who enter the contest attend schools within the Nicor Gas territory. Below are a few of the outstanding winners!



K-2 Grand Prize Winner
Maksym,
Gombert Elementary,
2nd Grade



3-5 Grand Prize Winner
Lauren,
St. Cletus School,
5th Grade



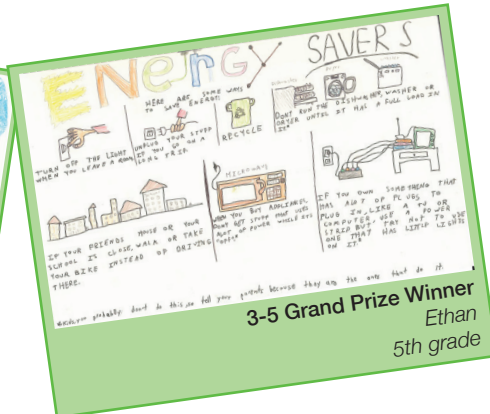
6-8 Grand Prize Winner
Aamerah,
Tefft Middle School,
7th Grade

Citizens Energy Savers Contest

Citizens Gas in Indiana challenged Marion County students, kindergarten through grade eight, to a creative competition similar to EBD. The rules were simple; students were asked to create a unique poster explaining ways to conserve energy in their community and at home. Here are the grand prize winners of Energy Savers!



K-2 Grand Prize Winner
Ellis
1st grade



3-5 Grand Prize Winner
Ethan
5th grade



6-8 Grand Prize Winner
Laura
6th grade



Solar For Schools Slogan Contest

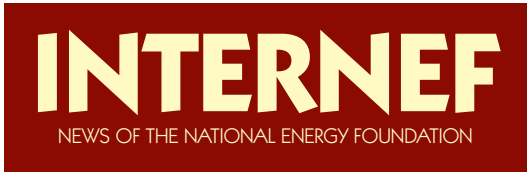
Johnson Controls Inc., the Utah State Energy Program and National Energy Foundation sponsored the Solar for Schools Slogan Contest. This contest allowed for Utah students to come up with a slogan to demonstrate the importance of solar energy. Teachers submitted entries and the winning class received \$250 in NEF materials and their slogan was put on the new NEF Solar for Schools poster. The poster was sent to all of the teachers that entered.

Roger Wilcox and his students from Canyons Technical Education Center (High School) in Canyons District were the winners with the slogan "Watts up with our school, sun?"



4516 South 700 East, Suite 100
Salt Lake City, UT 84107
801-327-9500 – nef1.org

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INTERNEF provides news about programs, materials, opportunities and the progress of National Energy Foundation. We appreciate our sponsors and their commitment to education. It is our goal to share the efforts and successes of energy education.

Managing Editor.....Dari Scott
Editor/Writer.....Mac Scott
Layout and Design.....Michael Bonner

President's Message



Bob Poulson

There is an old proverb that states, "Failure to plan, is planning to fail." Slightly different variations of this quote have been attributed to different people from different cultures throughout the years, but the idea that by not considering the future, we are setting ourselves up for failure is the consistent message. The way we plan for our future energy use and production will play an important role in determining social, economic and political stability.

Planning a future with successful energy management is much like planning a retirement portfolio. In order to give ourselves the best possible chance at success, we need diversity in the natural resources we use. As technological advances continue, Americans have become accustomed to the many aspects of life that use a lot of energy. To maintain the way of life that we have come to appreciate, it will be beneficial for us to use the wide range of energy sources available.

As a country, we need an energy plan that will be sustainable for generation after generation. About five percent of the world's population lives in the United States but we use one-fourth of the world's energy. Since energy markets tend to fluctuate, it is important to not get caught up in energy trends that may be the flavor of the month. Keeping an eye on the big picture of energy diversity is important even if both people and markets are drawn to one energy source or another.

The best way to safely secure our energy future and sustain the ability to freely utilize energy is to develop wise practices with coal, natural gas, nuclear, oil, renewable resources and any other source that may gainfully contribute to our energy portfolio. When we employ a range of viable energy options with energy efficiency, then a sustainable plan will more thoroughly be developed. Adapting technology, behavior and public opinion will allow for future energy use without compromising comfort or convenience.

