More than 60 exhibits, workshops and presentations will be available.

HIGHLIGHTS

Energy Smart
This alternative energy program at Heritage High School outside Vancouver, Washington, won the Grand Prize at this year’s Imagine Tomorrow science competition at Washington State University. The program includes activities with solar power, horticulture and recycling; an outstanding biodiesel research and production plant will be presented at the Expo.

Alternative Energy
Graduates of this Colville High School program can receive up to 19 credits at Spokane Community College while learning about alternative energy applications and the nuts and bolts of modern electronics.

Anaerobic Digester
Teachers from Auburn High School and Ridgeline Middle School in Yelm built an anaerobic digester that converts cow manure to methane to electricity, with the goal of seeing if digesters can be built as high-school shop projects.

Urban Agriculture
Nearly one dozen exhibits will illustrate different aspects of urban agriculture. The Expo will also include an expert panel discussion about the need for and feasibility of sustainable agriculture.

Nissan Leaf
About 2,500 electric charging stations are being installed in greater Seattle to help support the introduction of the Nissan Leaf and other electric vehicles. Support technology will be on display at the Expo.

Human Horsepower
An exhibit by the Cascade Bicycle Club will show how much human energy it takes just to power a standard kitchen blender.

Green Marine
Seattle remains a major international seaport. Learn about the new ways that the Port of Seattle and transportation firms are greening up their business operations.

Granite Falls High ShopGirls with their car, Iron Maiden. The ShopGirls include, standing left to right, Shante Stowell, Pooja Sethi, Katie Jackson, Maia Hanson, Sweta Kern. Kneeling: Sara Rood.

Maia Hanson thought she wanted to be an engineer. So she signed up last year to join ShopGirls, an all-girl team at Granite Falls High School that was building a super-fuel-efficient prototype automobile. But as the car came together, a funny thing happened to Maia’s career plans.

“Building the car made me realize engineering isn’t something that I’m passionate about,” Hanson says. “But it really helped me with life skills — with communicating, time management, project planning, being part of a team working in a competitive environment in a real-world setting — just learning how to work with people.”

This is a pretty good testimonial for the power of hands-on learning that will be on display at the Expo.

The ShopGirls project grew to be so difficult the girls named their car the Iron Maiden — because it tortured them. But they stuck with it, designing and building a car that gets an astounding 470 miles to a gallon of diesel.

The Iron Maiden qualified for the Shell Oil Company Eco-marathon Americas competition last spring in Houston, Texas. The car took first place in the prototype diesel category, and the ShopGirl became the first all-female group to participate in the Eco-marathon.

Their teacher, Michael Werner, says it wasn’t really about automotive science and tool use.

“The students think they are building a car,” he says, “but they are really learning how to do some really, really hard things. Like learning how to work together and realizing that not everything in life is instant gratification. They are also learning about themselves. Who are they? What do they want to do in life?”

Some of the girls love to complain about the break-in period. Observes ShopGirl Semira Kern, “Mr. Werner was very demanding at the start, and he wasn’t the most sensitive teacher around. But he grew on us.”

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Ride the Roadster
A drawing will be held for rides in a 2010 Tesla Roadster, an all-electric sports car that can go from 0 to 60 in four seconds. The Roadster will be one of many electric vehicles brought to the Expo by the Seattle Electric Vehicle Association.

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The Green Expo helps teachers learn about the career opportunities created by the transition to more efficient energy resources, processes and products — and the skills required to fill those positions. The Expo is open to students and teachers. Up to 15 clock hours are available to K – 12 participants.

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“Green” is one of the most popular adjectives in the history of American marketing, but that doesn’t mean everyone understands what “green jobs” are. The Green Expo helps clear the fog by connecting educators with green business practitioners like Mike Apol of Andgar Corp., who will staff the company’s booth at the Expo.

Based in Ferndale, Washington, Andgar has a product line including anaerobic digesters that convert cow manure into methane, an extremely potent greenhouse gas that can be used to generate electricity. Andgar has built six digesters at dairy farms across the western United States. The digesters collectively process 800,000 gallons of manure from nearly 30,000 dairy cows every day, while generating enough electricity to power more than 3,800 homes. Solids from the process are recycled and sold as a replacement for peat moss or used for dairy-cow bedding. Water that is reclaimed can be used for irrigation.

Apol started at Andgar 14 years ago after a year in community college persuaded him that college was not for him. Hired as a general laborer, his entry-level skills were slim, but he was taught STEM — Science, Technology, Engineering and Math — and the next day you may be pouring concrete.”

Bernie is a Green Power pioneer with a revolutionary electrical generating plant that uses the warmth of the earth to power his Chena Hot Springs Resort outside Fairbanks, Alaska. Bernie is a highly colorful speaker who is often inspiring and never dull. He will also conduct a workshop. You can learn more about Bernie and his alternative energy efforts at www.chenapower.com and www.seattlenews.org/FAQS/Table.php.

Chena Challenge

Bernie is donating a free stay at the Chena Hot Springs Resort to the teacher with the best proposal. Bernie plans to visit the Chena to stay and work on a green-technology learning project for students. The winner will also get two free round-trip tickets from Seattle to Fairbanks from Alaska Airlines. Learn more at www.greenexpo-wa.com.

The Green Expo is a partnership between educators and the industrial business community. Co-sponsors include:

**Educational Resources**

- Curriculum Swaps
- Scholarships and Grants

**The Green Expo is designed to help teachers learn how to incorporate green technologies and related topics into their lesson plans. Resources include:**

- Kickoff: Bernie Karl
- Keynote Address: Dr. Debra Rowe
- Educational Resources
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- STEM Innovators

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