

Chena Power Quarterly

"Do what you can, with what you have, where you are."

-Theodore Roosevelt



Chena Power Quarterly

Issue 2 - Fall 2010



Community Energy Lecture Series

Chena Power's own Jesse Warwick and Michael Gomes will be presenting a lecture on the Chena Power clean biomass power plant project. Tuesday, August 31 at the Blue Loon from 6 - 7:30 pm.

August 31

Alaska State Fair in Palmer

Nestled in the heart of the Chugach Mountains, in the fertile Matanuska-Susitna Valley, the Fairgrounds are just an hour north of Anchorage. Each Fall, the Fair provides a setting for Alaska's last blast of summer, a showcase of Alaska's uniqueness and beauty. Come to Palmer and join the fun. August 26 - September 6

Chena Fresh Produce Now Available!

Chena Fresh produce is now served at Alaska College Coffee Roasters and Bobby's Downtown in Fairbanks and is available for purchase at Chena Hot Springs Resort. Come out for a soak and bring home some fresh...Chena Fresh! www.chenafresh.com Now Available!



6th Annual Chenafest

Don't forget to mark this date on your calendar. More information at www.alaskaffa.org or at www.chenafresh.com October 2

Biomass Power

As many Alaskans are aware (hopefully) Chena Power is installing a 500kW biomass power plant near Fairbanks, Alaska. The emissions from this power plant will be used to heat and provide carbon dioxide to greenhouses that will grow produce for the local market and algae for biofuel production. This type of setup is also known as a combined heat and power, or simply CHP, power plant. Chena Power has an ultimate goal to expand the power plant to 2.5MW gross power production that will operate off of woody biomass and recycled products from the landfill.

It should be noted that this is a demonstration project that has the additional goal of proving our new technology. Once proven, this technology could revolutionize biomass power generation in Alaska. The turbines used in the construction of the Chena Power Clean Biomass Power Plant are



Heat Exchanging System (evaporators, condensers, preheater, and recuperators) for the Chena Power Clean Biomass Power Plant

magnetic drive bearings that increase the efficiency of the power plant significantly.

The project is scheduled for completion in 2011. Imagineer and partner in the project, Bernie Karl, plans to arrange for tours of the facility that would

be similar to the current Renewable Energy Tours that are offered at Chena Hot Springs Resort at 2pm and 4pm everyday. "The tours are free to the public and an essential part in educating ourselves about renewable energy and inspiring our children to use their heads for something other than a hat rack," said Karl.

For more information find Chena Power on the web at www.chenapower.com and check back throughout the winter for updates on the Chena Power Clean Biomass Power Plant.

Chena Power is seeking partnerships and financial support to forward this, and

other, innovative, groundbreaking projects around the state. United Technologies Research Center, Pratt & Whitney Power Systems, the University of Alaska Fairbanks, and the Fairbanks North Star Borough are all contributing to the success of this pioneering project. ■



Harvest Time in Alaska

As the days shorten and the nights begin to cool, it's time for us to celebrate the bounty of the harvest. What better place to celebrate than at *Chenafest*. *Chenafest* is a harvest banquet, held at Chena Hot Springs Resort every year. This year marks the festival's 6th anniversary, and it will be held on Saturday, October 2nd. All benefits go to Future Farmers of America (FFA).

From the first harvest of apples from our 130 new Columnar apple trees to our harvest of seasonable vegetables and herbs, attendees will experience freshness on every plate thanks to our gardeners who have spent the time tilling the soil and tending their gardens by hand. The main course is a local prize steer donated by Bernie Karl, who purchased it at the Tanana Valley Fair livestock auction.

family owned company dedicated to working with us in finding solutions for Alaska's horticultural needs. We are working in partnership with NRCS/ USDA on the expansion with a comprehensive four-year nutrient management plan that will allow us to expand the growing season in early spring and late fall. Once the plan is implemented we will be publishing our results at www.chenafresh.com.

We are continuing to conduct research in the *Chena Fresh* greenhouses by expanding our studies to cucumber and pole beans, experimenting with the use of LED lighting as a primary light source. Another research project is to be conducted with our sister company and publisher of this newsletter, *Chena Power*. The goal is to create greenhouses collocated with the Biomass (combined heat and power) CHP Plant (see page 1).

Our goal is simple: find solutions in agriculture and energy that provide long term sustainable independence for all Alaskans, especially those in our rural communities.

When you eat produce, think about a farmer, where your food comes from, and what went into producing it. (It tastes better that way.) Have a great Fall. ■

Tickets are available for purchase through any FFA member, at Chena Hot Springs Resort, or you can RSVP by emailing farmer@alaskagrown.org. Ticket price is \$25 and dinner will start at 5pm. More information on this event can be found at www.alaskaffa.org/chenafest.

Our ongoing commitment to sustainable agriculture in our rural environment is closer to being realized with the construction of our new hoop-house, designed and manufactured by *Stuppy Greenhouse Solutions*, a 5th generation



Just some examples of the bountiful harvest that comes every Fall at Chena Hot Springs Resort. With the warm soil and loving care, these veggies are unsurpassed in quality.



Every season Chena Hot Springs Resort grow their own herbs and flowers for use in the restaurant where you can try a flower salad. Annual harvest banquet. See *Harvest Time in Alaska*



Chena Power's William Bilbow stands with his shovel ready to feed wood chips to our new gasifier. This technology creates hydrogen fuel that can be used to power combustion engines

See *Fun and educational for all ages on page 3*



Highly nutritious seeded mats for livestock consumption. One of the new technologies featured at this year's Annual Renewable Energy Fair.

See *Fun and educational for all ages on page 3*



5th Annual Renewable Energy Fair

“Main Street” at the Renewable Energy Fair

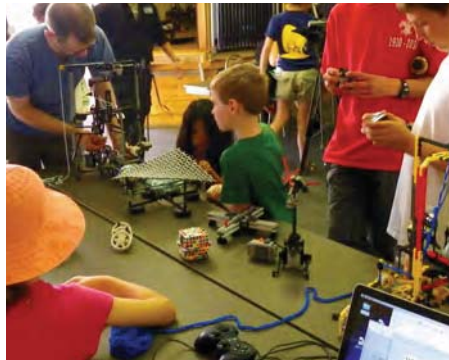


This year's theme was “Pollution Solutions”. True to its theme the fair offered solutions to many problems facing the renewable energy industry. The director of the Advanced Research and Projects Agency, or ARPA-E, Arun Majumdar was a keynote speaker. His agency receives millions of dollars in government funds to find solutions to energy problems. Majumdar spoke about new advanced technologies such as laser drilling which would significantly reduce the capital needed for geothermal drilling. As you may or may not be aware, most of the cost associated with geothermal projects is in the drilling. Bernie Karl is quoted as saying, “Drill baby drill; but not for oil, for hot water” during his time as MC and host of this annual event.

This year there was a new do-it-yourself track added to the fair. Michael Golub, a UAF graduate student and renewable energy enthusiast, taught a hands-on course for anyone to convert their ATVs or snow-machines to an electric only system. More evidence that we do have some great talent right here in Alaska.

In addition to all the free classes, lunch, and ice cream many legislatures, community leaders, and scientists were in attendance. ■

Fun and educational for all ages



If you haven't been to one of the Renewable Energy Fairs, you really should consider going. It's a fun and educational day for the entire family. There was a petting zoo, science experiments that involved analyzing the DNA of a strawberry, and lego robotics. There were also many demonstrations on the basic premise of heat exchange and harnessing geothermal energy from the earth.

Free tours of both old and new projects were offered every hour. There were two new pieces of technology that were featured at this year's fair. Our first new piece is a Fodder Unit that has been specifically developed to grow sprout grain and legging seeds for highly nutritious but cost effective livestock feed. Amazingly, this unit can produce its yield with only six days in between seeding and feeding out.

The other new piece of technology we were excited to showcase to the public was our gasifier. This technology allows for the user to input ordinary wood in exchange for hydrogen fuel that can power an internal combustion engine. This idea is not entirely new, but this design certainly is. ■

Ft. Wainwright to start new recycling program



Chena Power's sister company, K&K Recycling, Inc. is partnering with Ft. Wainwright to implement a new recycling program. The new program will start with a test phase that will include one site on the north part of the Army post.

Program lead, Phil Cole of K&K says, “This could revolutionize the way we look at our waste. In fact, it's not a waste stream, it's a resource stream. There have been other attempts at recycling here in the interior that may not have worked out. Does that mean we shouldn't try? Heck no. It just means we have to do it smarter”.

This pilot project could spur other organizations in the community to reevaluate their stance on recycling in the interior. ■

Chena Power is a locally owned renewable energy company.

We are committed to our goal of providing affordable, practical, and renewable ways to generate power and grow food for all of Alaska. We are available for consulting on renewable energy projects, LED lighting, and more. For more information or an electronic version of this newsletter, visit us at chenapower.com or email chenapower@gmail.com



“Renewable solutions for tomorrow, today.”

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