

The Geysers Steamline

GEYSERS GEOTHERMAL ASSOCIATION

VOLUME XXV, NUMBER 1

WWW.theGGA.org

SPRING 2009

Two Fred Haley Memorial Scholarships to be presented

Scholarship chair Louis Capuano III has announced that two \$1,000 scholarships will be awarded to two high school seniors whose parents are directly involved with and spend a majority of their working time doing Geysers Geothermal work.

Please note that a scholarship application is included on page 5 of this newsletter. Because this is an industry-based scholarship, applications will not be mailed out to area high schools, so if you have a child who is eligible, please make this newsletter available to him or her.

As noted on the application, selection of recipients will be based on the student's academic record, student activities, citizenship, and an evaluation of the renewable energy-related essay question.

Applications must be postmarked by April 30, 2009. Successful recipients will be notified by May 19.

Spring is membership renewal time—see form inside

In a move to economize, GGA membership renewal forms will not be mailed out to individual members this year. Instead, we have included the form in your newsletter.

Members who renewed at the Fall Dinner are paid through March of 2010. If you have not renewed since the November 11 dinner, your dues are due.

Corporate members who need invoices for bookkeeping should have already received their invoices in the mail. If not, please email membership chair, Marilyn Sanborn, msanborn@frontiernet.net.

Our membership drive will be running through May, so please forward contact information for prospective members to above email address. Many thanks.



Standing before a backdrop of fish ladder photos at the Calpine Visitor Center, Mike Rogers, Senior VP, Geothermal Operations, Calpine (right) presents a plaque to U.S. Senator Mike Thompson for his leadership in aiding Steelhead migration at the dedication ceremony last month.

Calpine dedicates project to Congressman Mike Thompson

The project was more than six years in the making from conception to reality, but migrating steelhead trout finally have a specially designed ladder to help them make it to the upper reaches of Big Sulfur Creek to spawn. The recently completed fish passage improvement project was dedicated February 19 by Calpine Corporation to U.S. Congressman Mike Thompson, First Congressional District of California, for his leadership and commitment to protecting California's natural resources.

The Big Sulfur Creek fish ladder, a joint venture between Calpine, the National Oceanographic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) and the California Department of Fish and Game (CDFG), now provides unobstructed, year-round access to the largest suitable spawning and rearing habitat on Big Sulfur Creek above the confluence with Squaw Creek.

"Calpine has long been committed to protecting our environment and preserving our natural resources, as has Congressman Mike Thompson," said Mike Rogers, Senior Vice President, Geothermal Plants at Calpine. "We were pleased to work with him, NMFS and CDFG, along with several contractors who added their expertise, to design and build this project on our Geysers Geothermal Operations property to

Continued on page 3



President's Message

By Ron Suess

Is the lack of political will slowing our geothermal renewable energy revolution? Geothermal energy, which has been heralded by some scientists over the years as a rich untapped resource, has garnered much less attention than wind and solar “green energy”, particularly from politicians. When it comes to promoting renewable energies, the rocky fortunes of geothermal energy in Washington suffer. Politicians rarely mention geothermal energy when campaigning—except, perhaps, when visiting Nevada or California.

Today, geothermal energy provides about five percent of the Country’s renewable energy, compared with about three percent for wind and one percent for solar. But the current level of interest, experts say, is only a fraction of what it could be, because the geothermal industry has fallen victim to the harsh vicissitudes of Washington politics.

Even so, now, there is some reason to be optimistic. Given, the investment landscape is rocky right now, but, comparatively speaking, private investment is up, domestic use is steadily growing, and soaring energy prices have made previously prohibitive start-up costs economical.

Here are some insights about how to proceed in gaining the political will to really push the expansion of geothermal energy in general, but particularly here in California and especially at The Geysers. Some of these insights are obvious and often stated, but they merit repeating here to help build political will so as to move forward the expansion of geothermal energy in California.

- Continue to proclaim that geothermal energy does have some significant advantages, not only over traditional fossil fuels but also over other renewable energies.
- Continue to preach that, unlike wind and solar power, geothermal power is generated constantly—24 hours a day, seven days a week.
- Continue to extol that geothermal energy is largely carbon free compared to fossil fuels.

- Work to change the business model for the exploration, drilling, and development costs so as to create incentives to move into, heretofore, unattractive areas and potentially expand geothermal capacity.
- Continue to push the development of new technologies for utilizing geothermal energy. A panel of scientists from the Massachusetts Institute of Technology found that advanced geothermal technologies could potentially supply as much as twenty percent of the Country’s energy needs.
- Continue to advocate that the government contribute increased provisions such as less structured funding and tax incentives like tax credits. These are areas where political will is really tested.
- Declare that geothermal is not a mature industry; it is just in its adolescent stage; much more growth and maturity and the best utilization are yet to come.

Folks within the geothermal industry, and that includes those of us at The Geysers, are pleased with the surge in interest, but we know that greater government support in the past few years could have put us in a stronger position. We’ve got to capture the interest when it’s there. And now is the time, since there is a consensus that geothermal energy could contribute significantly to the Country’s future energy solution.

We at The Geysers can work with and through the GGA to make our contribution to fostering the requisite political will in our politicians and our government to make it all happen. Let your GGA know your ideas and thoughts about the advantages and benefits of geothermal energy and how to best utilize it so we can express them to Congress by e-mail, letters, and phone calls.

Geysers Geothermal Association

PO Box 6501
Santa Rosa CA 95406
President - Ron Suess
707 541-0976
www.theGGA.org

Fish ladder dedication highlights environmental success

accommodate migrating fish. It was our goal to help preserve and increase steelhead spawning and rearing habitat, and we feel that has been accomplished with this project.”

“Wildlife conservation and green energy production don’t have to be in conflict,” said Congressman Mike Thompson (D-CA). “California’s steelhead population has declined by almost 90 percent since the 1960’s, and we must continue to work hard on protecting their habitats so they can rebuild their populations. At the same time, as our economy shifts towards more renewable energy sources, we will need more, not less geothermal energy plants like The Geysers. This innovative, unique fish ladder shows there is a fish-friendly approach to green energy generation. I’m proud that our district continues to lead the way in finding green conservation solutions.”

Steelhead trout spawn from December through April in coarse gravel areas of small streams and tributaries where cool, well-oxygenated water is available year-round. Big Sulfur Creek is one of the largest tributaries to the Russian River in Sonoma County. However, much of Big Sulfur Creek above Squaw Creek is naturally unsuitable for spawning and rearing, placing a premium on those few areas that are.

“This is rich steelhead habitat. Recently, over 2,400 adult and juvenile steelhead were found in the project area. Calpine’s fish ladder will provide a real benefit to this threatened species,” said Steve Edmondson, Northern California Habitat Supervisor, National Marine Fisheries Service. “Calpine’s ladder is designed to provide fish passage over a wide range of flows, allowing adult and juvenile fish to find optimal conditions throughout the year. Partnering with Calpine on this project was a win-win for benign, renewable energy and steelhead.”

A road crossing on The Geysers property, consisting of a triple concrete box culvert, was found to be a partial barrier to fish migrating upstream. After several studies were conducted and options evaluated, a pool and chute fish ladder design was ultimately developed to provide suitable passage conditions within the culvert. At moderate to high water levels, the ladder was shaped to create stable streaming flow conditions along its margins. Combined with ladder steps designed to provide juvenile fish passage at lower flows, it allows upstream fish migration over a wider

range of stream flows compared to traditional fish ladders.

Russian River steelhead runs in the 1970s were estimated to be on the order of 65,000 fish, but by the mid 1990s, estimates plummeted to as low as 1,750 fish. Each year, Russian River steelhead make the more than 70-mile journey from the ocean to spawn in their natural habitats including Big Sulfur Creek. The fish that make it find an oasis of good spawning habitat in one of the most active geothermal areas of the world.

The fish ladder project at The Geysers was completed in October 2008. An early October storm watered up the ladder and resident fish have been observed using it ever since.

Source: Calpine Corporation

Membership Drive

Do you know someone who would like to be a GGA member? If so, send us their contact information and we will invite them to the summer barbecue. If they sign up as a corporate member either before or at the summer barbecue, they will get 10 percent off their first year’s dues! And don’t forget to send them to our website to learn more about us. Send information to Marilyn Sanborn, msanborn@frontiernet.net or Margaret Lewis, LewisM@calpine.com.

Geothermal educational materials available

The Geothermal Education Office has a great website for anyone interested in geothermal energy to check out: <http://geothermal.marin.org>.

The Marin based organization also has a wealth of educational materials about geothermal energy. To purchase a video or obtain literature contact the following:

Marilyn Nemzer
Geothermal Education Office
664 Hilary Drive
Tiburon CA 94920

or email: mnemzer@aol.com;
fax: 415 435-7737; phone: 415 435-4574.

GGA members to present at GEA Geothermal Energy Project Showcase in May

GGA corporate members Ormat, ThermaSource and Western GeoPower will be among leading geothermal companies in the U.S. traveling to Washington, D.C. next month to take part in the Geothermal Energy Project Showcase hosted by the Geothermal Energy Association (GEA). This event provides an opportunity for participants to demonstrate their geothermal projects (via video or stills) before members of Washington's energy policy and technology communities.

Scheduled for May 6 from noon to 5:00 p.m. the Geothermal Energy Showcase will be held in the Conference Center at The Newseum, a 250,000-square-foot museum of news in Washington, DC. Billed as a blend of five centuries of news history with up-to-the-second technology and hands-on exhibits, The Newseum is located at 555 Pennsylvania Avenue, N.W.

Ormat, ThermaSource and Western GeoPower are among presenters in the first group scheduled to begin at 12:10 p.m., along with POWER Engineers. Enel North America, a subsidiary of Enel S.p.A, Ladarello, Italy will present in group two, as will Nevada Geothermal Power and possibly Geothermal Development Associates. Presenting in group three will be UTC Power, Raser Technologies and Chena Hot Springs.

U.S. Department of Energy, Google, Inc. and Alta Rock Energy have been invited to present under the 4:00 p.m. banner, *Enhanced Geothermal Systems: A Vision of What's Possible*.

GEA Executive Director Karl Gawell will serve as moderator for the afternoon. A panel discussion, chaired by Ed Wall, U.S. Department of Energy, Geothermal Technologies, will feature the following leading geothermal experts: Hydrothermal - Lisa Shevenell, UNR; Geothermal and coproduction - Maria Richard, SMU; Geothermal and EGS - Jefferson Tester, MIT; and Small Power - Bernie Karl, Chena Hot Springs.

A 4:30 p.m. networking reception will mark the end of this exciting geothermal gathering.

Richard Chow is interim president of ThermaSource

Richard Chow was appointed Interim President, ThermaSource in November, 2008.

Richard has over 15 years of experience in the energy sector, including serving as the President and Board member for several companies. Before coming to ThermaSource, he was the President of a private equity-backed biofuels venture, where he oversaw all aspects of the business and the sale of the company.

Richard founded Presidio Energy in 1999, an advisory firm focused on alternative energy. Prior to Presidio, he worked with a series of joint venture companies under Bechtel Enterprises (part of Bechtel Group) that developed, financed, and owned power generating assets. The companies included EnergyWorks Asia, where he was the President.

EnergyWorks focused on the development of renewable energy projects and onsite generation for industrial and commercial customers. At US Generating Company, another Bechtel JV, he worked on a range of power projects, including coal, hydro, biomass, natural gas, and all major forms of renewable energy.

Richard has a BA from Wesleyan University and an MBA from the Yale School of Management. He is on the National Council for the World Wildlife Fund (WWF), the world's largest conservation organization.

TV program includes geothermal

Geothermal energy received approximately 30 seconds of air time on Discovery Channel's *Global Warming: The New Challenge with Tom Brokaw* March 19, according to GGA member, Karen Stone, who had heard that John Farison, Calpine, had been interviewed for the broadcast.

This program was a follow-up to Tom Brokaw's Emmy-award winning special which asked, what are the most promising scientific, technological, and economic solutions in this country that could have an impact on reversing global warming?

Karen said she had hoped for a bigger boost for geothermal, however, interest in our industry is certainly growing. President Obama has referred to it at least twice when talking about renewable energy on national television.

Fred Haley Memorial Scholarship Application

Attention GGA Members:

The Geysers Geothermal Association (GGA), a non-profit trade association, which is comprised of the various companies that constitute the geothermal industry in Lake and Sonoma Counties, is pleased to announce the availability of the Fred Haley Memorial Scholarship.

There will be two (2) scholarships awarded to two (2) high school seniors whose parent(s) are directly involved and spend a majority of their working time in Geysers Geothermal work. Each scholarship will be for \$1,000. The scholarship program is one of the ways the GGA endeavors to be of service to the geothermal community.

Selection of recipients will be based upon the student's academic record, student activities, citizenship and an evaluation of the renewable energy related essay question.

Please note that there is no formal application form for applying for this scholarship, so be sure to include your name, home address and phone number in addition to the following information:

1. Current transcript through seven semesters of high school.
2. List of student activities including offices held.
3. List and brief description of all extracurricular and/or community activities.
4. Statement of verification by the applicant's school counselor.
5. One-page statement (essay) by the applicant about their future goals.
6. Brief statement by the parent(s) describing their work relationship to The Geysers Geothermal Field.
7. One-page essay answering the following question: "What renewable energy sources could economically supplant fossil fuels for future power generation?"

Applications must be postmarked by April 30, 2009. Successful recipients will be notified by May 19, 2009. Applications or questions should be addressed to:

Scholarship Committee
Geysers Geothermal Association
P.O. Box 6501
Santa Rosa, California 95406

Sincerely,
Scholarship Committee

Obama eager to cooperate with Iceland on geothermal energy

During the NATO summit in Strasbourg and Kehl this month, Iceland's Minister for Foreign Affairs Össur Skarphéðinsson and US President Barack Obama discussed a closer cooperation between their countries on geothermal energy.



Skarphéðinsson and Obama at the NATO summit.
Courtesy of the Ministry for Foreign Affairs

President Obama declared that he was interested in such cooperation, adding that he was familiar with Iceland being a leader in the field of geothermal energy, as stated in press release from Iceland's Foreign Ministry.

Obama added that his government is determined to develop renewable energy resources to reduce emission of greenhouse gases and create new "green" professions.

Before the summit came to an end, Obama appointed one of his primary consultants in the White House as a special contact for Iceland regarding energy cooperation.

In his speech during the NATO summit Skarphéðinsson emphasized the importance of including the Nordic and Arctic regions in the development for a new strategy for NATO, pointing out that with the warming of the atmosphere a new shipping route would soon open up between the Pacific and Atlantic Oceans.

That would cause increased transportation of goods through the Arctic Ocean while the melting of the polar ice would also reveal new territories where natural resources could be harnessed, such as oil and gas. Skarphéðinsson warned against increasing military presence in the Arctic regions, but encouraged NATO member states instead to prepare for a new role in relation to increased traffic and the harnessing of natural resources in these regions in the coming decades.

In the summit's final comments, Iceland was thanked for bringing up the topic of safety in the Arctic.

Source: <http://energy.sourceguides.com/news/2009/April7.shtml> from Iceland Review

TANC launches public scoping meetings for TTP project

The Transmission Agency of Northern California (TANC) and its partner, Western Area Power Administration (Western) have begun the public scoping portion for their joint transmission project, the TANC Transmission Project (TTP), staging public meetings in Sacramento, Alturas, Burney, Santa Clara, Turlock, Chico, Susanville, Modesto, Tracy, Redding, Williams and Stockton between March 26 and April 15.

When finished, the proposed project would increase California's electric system reliability and provide increased access to California-based renewable resources, (wind, solar and geothermal).

The TTP would be entirely located in California and would consist of five segments of transmission line corridor that extend from northeastern California through the Central Valley and split westward to the San Francisco Bay area and eastward to the Sierra Foothills.

According to spokespersons from TANC and Western, new transmission lines are needed to support California's renewable energy goals, Renewables Portfolio Standard achievement, customer expectations and environmental priorities. They could also help prevent rolling brown-outs experienced in recent years.

GGA BUSINESS DIRECTORY

Support our Corporate Members, the backbone of GGA

CONSULTANTS

Blaydes and Associates
• Paula E. Blaydes
1275 Fourth Street #214
Santa Rosa CA 95404
530 223-6355

Data Instincts
• Mark Millan
239 Windsor River Road
Windsor CA 95492
707 836-0300

EGS, Inc
• Paul Brophy
3883 Airway Drive
Suite 340
Santa Rosa CA 95403
707 544-0955

Graphic Vision
• Kathy Eneyd
3883 Airway Drive
Suite 340
Santa Rosa CA 95403
707 636-5815

MHA Environmental Consulting
• Laurie McClenahan
4 W. Fourth Ave, Ste. 303
San Mateo CA 94402
650 373-1200

Nick Voegtly Safety and Loss Control
• Nick Voegtly
11725 Loch Lomond Rd.
Middletown CA 95461
707 349-7233

Roger Proett Company
• Roger Proett
935 Baird Road
Santa Rosa CA 95409
707 539-7238

Ronald E. Suess Company
• Ronald E. Suess
1275 Fourth Street #105
Santa Rosa CA 95404
707 541-0976

Tecton Geologic, Inc.
• Alan Frazer
5610 Skylane Blvd., Ste. A
Santa Rosa CA 95403
707 571-1700

ENGINEERS AND CONTRACTORS

Carlenzoli and Associates
• Leroy E. Carlenzoli
325 Tesconi Circle
Santa Rosa CA 95401
707 542-6465

Carlile- Macy
• Bruce Jarvis
15 Third Street
Santa Rosa CA 95401
707 542-6451

Frick Engineering
• Ralph Frick
2228 Fremont Drive
Santa Rosa CA 95404
707 538-2821

Kleinfelder
• Steve Korbay
801 Muscat Court
Petaluma CA 94954
707 571-1883

Northern Industrial Construction
• Frank Karp
PO Box 1352
Kelseyville CA 95451
707 279-0381

Two-Phase Engineering
• Doug Jung
3209 Franz Valley Road
Santa Rosa CA 95405
707 523-4585

Veizades & Associates, Inc.
• Harry Veizades
5 Third Street, Suite 400
San Francisco CA 94103
415 394-8855

DISTRIBUTORS

Jonas Oil
• Jim Jonas
PO Box 277
Lower Lake CA 95457
707 994-6535

Northern Energy
• James Gunnink
285 Kinley Drive
Healdsburg CA 95448
707 433-5581

Univar
• Dave Wiley
2256 Junction Ave
San Jose CA 95131
408 435-8700

DRILLING SERVICES

Boart Longyear Company
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PO Box 1000
Dayton NV 89403
775 246-0296

Nelson Drilling Tool
• Tom Nelson
PO Box 477
Rio Vista CA 94571
707 374-6172

Obie's Drill Pipe Service, Inc.
• Obie Sanders
PO Box 647
Middletown CA 95461
707 987-2001

Team Casing
• Neil O'Shaughnessy
PO Box 1723
Marysville CA 95901
530 743-5424

ThermaSource
• Louis Capuano
3883 Airway Drive Ste. 340
Santa Rosa CA 95403
707 523-2960

Weatherford Int'l, Inc.
• Rick Benton
1000 Church Road
Rio Vista CA 94571
707 374-6493

EQUIPMENT AND MATERIALS

A-1 Milmac, Inc.
• Kevin Dunne
460 Cabot Road
S San Francisco CA 94080
650 871-4343

Ballew Tool Company, Inc
• Leon Ballew
PO Box 864
Middletown CA 95461
707 987-0837

C-K Supply, Inc.
• Gene Kirkendall
PO Box 550
Lakeport CA 95453
707 263-7700

Hudson Mechanical
• Craig Hudson
PO Box 493190
Redding CA 96049
530 223-6355

EQUIPMENT AND MATERIALS

Jackson Equipment Co.
• Wayne Jackson
PO Box 669
Middletown CA 95461
707 987-3660

Mahl Tek Inc.
• Dan Mahl
PO Box 2520
Mill Valley CA 94941
415 388-7494

Petrochem Inc.
• Brian Benson
110 Corporate Place
Vallejo CA 94590
707 644-6968

Rain for Rent
• Zane Smith
390 West Kentucky Avenue
Woodland CA 95695
530 662-1024

Thomason Mechanical Corp.
• Bruce Perry
2150 E. 37th Street
Vernon CA 90058
310 639-3523

LEGAL SERVICES

Babin & Seeger, LLP
• Martin Seeger IV
3550 Round Barn Blvd.
Suite 201
Santa Rosa CA 95403
707 526-7370

SPECIALIZED SERVICES

Action Sanitary, inc.
• Jerry L. Campo
PO Box 492
Lower Lake CA 95457
707 994-5068

Chem-Tech Services
• Boyd Green
PO Box 1369
Cobb CA 95426
707 928-4676

PowerChem Technology
• Barry Penzel
2555 Business Parkway
Minden NV 89423
775 267-2000

Sierra Crane Company
• Doug Burgard
2530 Burgard Lane
Auburn CA 95603
916 663-3794

SPECIAL SERVICES

TNG Energy Services
• Bryan Greuter
3505 Standard Street
Bakersfield CA 93308
661 323-7031

Turbocare
• Dave Stenson
184 Malbert Street
Perris CA 92570
800 659-5908

NETWORKING

Geothermal Resources Council
• Curt Robinson
2001 Second Street #5
Davis CA 95616
530 758-2360

STEAM SUPPLIERS & POWER PLANT OPERATORS

Bottlerock Power Plant
• Kevin Bennetto
PO Box 326
Cobb CA 95426
707 928-4578

Calpine Corporation
• Ralph Aviles
10350 Socrates Mine Road
Middletown CA 95461
707 431-6000

Northern California Power Agency
• Steve Eneyd
PO Box 663
Middletown CA 95461
707 987-4033

Ormat Nevada Inc.
• Charlene Wardlow
PO Box 71533
Reno NV 89570
775 336-0155

Western GeoPower Corp
• Mike Long
235 Foss Creek Circle
Healdsburg CA 95448
707 723-4455 Office
707 723-4082 Direct
208 863-5632 Cell
• Ken McLeod
1351-409 Granville Street
Vancouver BC V6C 1T2

Geysers Geothermal Association Board of Directors

Term of Office Expiration Dates				
	2009	2010	2011	2012
1.	Ralph Aviles	Steve Burden	Paula Blaydes	Ralph Aviles
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NOTE: GGA bylaws require the Board of Directors to consist of a minimum 15 members to a maximum 25 members. Currently, there are 18 members.

Compare the first three columns of this list with the list of appointees for 2009. This slate of Directors, which serves for one (1), two (2), and three (3) year terms expiring in successive years ending in 2009, represents the current BOD.

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Editor:
Marilyn Sanborn
msanborn@frontier.net
530 472-6442
Ben Barker
Dorothy Beebee
Margaret Lewis
Karen Stone

The Geysers Steamline
PO Box 6501
Santa Rosa CA 95406