

Renewable Energy & Energy Conservation Advisory Board

November 7, 2012

7:30 am

The Renewable Energy & Energy Conservation Advisory board gives notice of the meeting to be held on Wednesday November 7, 2012 at 7:30 a.m. The meeting will be held in the Environmental Department **CLASSROOM** at 450 N 1000 W in Logan.

Agenda

1. Acceptance of agenda/minutes
2. Announcements (10 minutes)
 - a. Open Announcements
3. Solar Farm (15 minutes):
 - a. Heritage Cove information
 - b. Meet With Rich Anderson, Logan City finance department and
 - c. Still plan on reservation list? If so, will send to media and email list when details are final.
4. Election (15 minutes)
 - a. Three candidates and 2 positions open (Jack Keller, Blake Thomas, and Matt Hansen)
 - b. Should we expand to include an additional member (amend bylaws) or take vote for two positions?
 - c. Update information in Welcome Packet
5. Review Mission Statement, Goals (30 minutes)
6. Next Meeting –DECEMBER 5, 2012 OR JANUARY 2, 2013?

JACK KELLER
Born: 5 January 1928

Chief Executive Officer
jkeller@kelbli.com

Education:

B.S. Civil Engineering, University of Colorado, 1953
M.S. Irrigation Engineering, Colorado State University, 1955
Ph.D. Agricultural and Irrigation Engineering, Utah State University, 1967

Relevant Career Activities

Dr. Keller has a unique blend of engineering experiences that include teaching, research, extension, and consulting. He is a nationally and internationally recognized expert in the design, implementation, and management of irrigation technologies and systems. He is currently involved in consulting activities related to: efficient irrigated agricultural development; irrigation project and on-farm water monitoring, verification and conservation planning; and developing efficient low-cost irrigation technologies for small plot farmers.

He is founder and presently Chief Executive Officer of Keller Bliesner Engineering LLC. He is also Professor Emeritus in the Biological and Irrigation Engineering Department at Utah State University, where he was Department Head between 1980 and 1986. Prior to joining the faculty at Utah State University in 1960, he was the Chief Irrigation Engineer in charge of product development and special irrigation project sales for W.R. Ames Company, a leading U.S. manufacturer of irrigation equipment (until it was bought in about 1970.)

During his tenure at the Utah State, he taught, carried out laboratory and field research, and consulted on sprinkle and trickle irrigation. Through his public and private activities, Keller has provided advisory services in irrigated agricultural development and water management in more than 60 countries. Many of his professional activities both for the university and in his private practice involved leading multidisciplinary teams to do irrigation project design, planning and evaluation and regional irrigation sector analysis. He has worked extensively throughout the US. He has also undertaken work assignments in the following countries: Algeria, Argentina, Australia, Bangladesh, Botswana, Brazil, Bulgaria, Burkina Faso, Canada, Cambodia, Costa Rica, Colombia, China, Dominican Republic, Ecuador, Egypt, Ethiopia, Eritrea, Guatemala, Honduras, Hungary, India (in several states), Indonesia, Iran, Israel, Jamaica, Jordan, Kenya, Kazakhstan, Kyrgyzstan, Lebanon, Libya, Mexico, Morocco, Nicaragua, Niger, Nepal, Pakistan, Panama, Paraguay, Peru, Russia, Saudi Arabia, Senegal, Somalia, South Africa, Sri Lanka, Tanzania, Tunisia, Thailand, Turkmenistan, Uzbekistan, Venezuela, Yemen, and Zambia.

Dr. Keller is the author of more than 90 technical papers, 50 major consulting reports, 9 handbooks and 2 textbooks in the areas of agricultural water resources planning and engineering, on-farm water management, and irrigation system design. He has received 4 US patents related to sprinkle, surface, and drip irrigation.

Keller's honors include: Irrigation Association's Person of the Year and Crawford Reid Awards; Utah State University College of Engineering's Research Excellence Award; State of Utah's Engineer of the Year Award; ASABE's Award for Advancement of Surface Irrigation; the Scientific American 50 Award; ASCE's Royce J. Tipton Irrigation and Drainage Achievement Award; and election to membership in the US National Academy of Engineering.

Keller is a member of and worked on several irrigation committees of the American Society of Agricultural and Biological Engineers and the American Society of Civil Engineers. He is also a member of the Irrigation Association, and the US Commission of Irrigation and Drainage. He chaired the Conservation Verification Committee that was responsible for evaluating the conservation water savings for the 105,000 acre-foot/year (130 Million m³/year) IID/MWD water conservation agreement. He served for 10 years on the CALFED Independent Science Board that oversaw the scientific aspects of the California Bay/Delta restoration. He currently serves on the Boards of two NGOs: International Development Enterprises, focused on rural poverty alleviation through a market creation approach to development using irrigation as an entry point; and

the Institute for Self Reliant Agriculture, with the mission of bringing self-sufficiency to poor rural families by teaching them to grow what their own food.

-----From Board Members-----

Jack Keller owns a home in Logan, UT. He has solar on his home and a geothermal heat pump. He has replaced a geothermal heat pump and donated his old unit (along with a financial donation) to help train future HVAC workers in Cache County.

- Emily

I know Jack very well and he would be an excellent addition to the board. He is a former Head of the Department of Agriculture and Irrigation Engineering at USU and he has an international reputation in Irrigation Engineering. He is a member of the National Academy of Engineering. He is also the founder of Keller-Blissner Engineering.

- Loren

I have known Jack well for a number of years now. He would be a terrific addition to our board. He has both solar and a ground source in his home. He is a well respected international expert in water and irrigation, especially low costs irrigation systems for the developing world. He has been a strong supporter of our Bioneers program from our start in 2004.

- Jim

E Matthew Hansen
566 E 1200 N, Logan 84341
752-7163 vquest4@q.com

Interest in serving on RECAP: I would like to help steer our city to a more secure, independent energy future. I think and believe this is a critical issue for our community in this time of peak oil, climate change, and increasing pollution. Renewable energy sources and conservation are the heart of future energy. In my opinion, it is wise to pursue these avenues as rapidly as possible.

Relevant experience:

- Served on the board of directors for Listener's Community Radio of Utah (KRCL), 2005-2008.
- Purchased a 2300 W (DC) photovoltaic system for my home in 2011.
- Purchased a 70 kBtu thermal solar system for my home in 2012.
- Resident of Logan since 2001; attended USU 1980-1986 and 1997-2000.
- Broadly knowledgeable regarding renewable energy sources, climate change, and the air pollution issue in Cache Valley.
- I prefer an "intellectual" approach to these issues, exploring and considering the evidence for and against various positions (ie, I am willing to be proven wrong if the weight of evidence is compelling).

Work experience:

- Forest entomologist with the Forest Service, Rocky Mountain Research Station (1995-present). Under the supervision of a research entomologist, I propose and conduct original research regarding the biology, ecology, and management of bark beetles. I have authored or co-authored ~10 peer-reviewed scientific manuscripts and delivered multiple presentations at scientific meetings and to the public. I have worked for the Forest Service for part or all of 30 years.
- Taught and co-taught, via USU extension and through my own private school ("EarthFire"), a variety of environmental education classes such as wilderness survival skill, wild edible plants, and animal tracking, 1996-2006.

Education:

- BS Forest Biology, Utah State University, 1986, cum laude.
- MS Ecology, Utah State University, 2000.
- I have also completed the coursework for a PhD in Ecology, 2007-2009.

Personal:

- I was born in California to Utahan parents and first visited Logan in the late '60s as my relatives often took me fishing in the canyon.
- Married since 1990.
- Father of one daughter, a 7th grader at Bear River Charter School.

Blake Thomas

Emily, I wish to nominate USU student Blake Thomas as a member of the Renewable Energy Conservation Advisory Board for the following reasons:

1. Blake has been heavily involved with renewable energy, energy efficiency, and energy conservation on the USU campus during the past few years as a student, Student Senator for the Quinney College of Natural Resources, and most recently as a student intern in our Student Sustainability Office where he focused on campus research related to energy and other aspects of sustainability. He also helped to coordinate an energy efficiency study on campus as part of a class project which resulted in significant energy savings.
2. Blake will complete his B.S. degree work this semester and begin his M.S. studies at USU this spring within the Environment and Society department, working closely with Dr. Roslynn Brain who works through the USU Extension Program on building sustainable communities throughout our state. One area of emphasis is on energy conservation and energy efficiency. Blake was the principle author of an energy conservation fact sheet that has been published on the newly created extension sustainability website. Thus, we will have Blake with us for several more years!
3. He is a very bright, creative, altruistic individual with considerable leadership experience, so he has a broad sphere of influence both on and off campus.
4. It's long past time that we add a student to RECAB!

Blake H. Thomas

Address:

814 E 200 N
Logan, UT 84321

Phone:

(434) 989-9098

E-mail:

blakehthomas@gmail.com

EDUCATION:

Bachelor of Science: Environmental Studies
Emphasis: Environmental Stewardship
Minor: Sustainable Systems
Quinney College of Natural Resources (QCNR), Utah State University (USU)
Logan, UT
December 2012

PROFESSIONAL EXPERIENCE:

Research and Programs Internship. USU Student Sustainability Office, Logan, UT (December 2011-December 2012)

- Facilitated and assisted students awarded with \$90K+ for sustainability research and projects on campus
- Performed sustainability assessments, wrote proposals, and implemented sustainable changes for on campus entities
- Co-programmed USU's first-ever Earth Week that was publicized in 14 newspaper articles and resulted in 1,015 signed environmental pledges by USU students

Botanical Field Technician. Kleinfelder, Vernal, UT (July-September 2011, May- August 2012)

- Used geospatial technology to mark 100+ cacti and prevented Newfield Exploration Company over \$200M in company costs
- Measured and monitored *Sclerocactus brevispinus* for BLM research relating the effects of construction dust on cacti size and health

Crew Leader. Utah Conservation Corps, Logan, UT (May-July 2011)

- Planned and executed construction of 8 miles of new hiking trails in Jordanelle State Park
- Trained, mentored, and assisted three AmeriCorps crew members in all facets of trail maintenance, chainsaw safety, and *Leave No Trace* outdoor ethics

Intern Associate Brand Manager. Alexandria Yellow Cab, Alexandria, VA (May-August 2010)

- Facilitated weekly social media updates and announcements which increased online traffic by 8% over a 4 month period

- Implemented online co-branding messages to increase awareness of online booking and payment options for consumers

UNDERGRADUATE EXPERIENCE:

QCNR Academic Senator. Associated Students of Utah State University, Logan, UT (May 2011-April 2012)

- Peer-elected representative of 380+ students in the QCNR
- Jointly administer over \$25K in student research travel grants and \$70K in classroom improvement funds
- Authored and amended legislation to fund campus environmental initiatives, improve overall student life at USU, and to increase Senate transparency via quarterly public reports in campus publications

Undergraduate Researcher. Round River Conservation Studies, Logan, UT (September-December 2012)

- Compiled an annotated bibliography focusing on sustainable economic development with tribal involvement
- Co-authored sustainable economic development proposal for San Juan County, UT County Commission

PROFESSIONAL PRESENTATIONS:

Thomas, B. (anticipated 2013, January) *Problem Solving and Sustainability: The Necessity of Global Thinking and Full-Cost Accounting.* Guest lecture in ENVS 4700: Communicating Sustainability. Utah State University, Logan, Utah.

Thomas, B. (2012, October) *How to Create a Student Sustainability Office at Your University.* Paper presented at the Association for the Advancement of Sustainability in Higher Education annual conference, Los Angeles, CA.

Cannon, Q., Ladd, K., Nelson, S., Thomas, B., & Tingey, B. (2012, April). *Reducing Snow Hall's Footprint.* Poster presented at the 1st Annual USU Student Sustainability Fair, Logan, UT.

TEACHING EXPERIENCE:

Designed ENVS 4700: Communicating Sustainability. ENVS 6900: Special Topics, Logan, UT

- Designed course syllabus, topics, and assignments with Roslynn Brain
- Capstone course USU Sustainable Systems minor

Undergraduate Teaching Fellow. ENVS 4000: Human Dimensions of Natural Resource Management, Logan, UT (August-December 2011)

- Aided faculty instructor with creation of course assignments and any other assistance needed

SCHOLARSHIPS AND HONORS:

USU Academic Opportunity Fund: \$500 USD. Associated Students of Utah State University, Logan, UT (October 2012)

Department of Environment & Society: \$100 USD. USU QCNR, Logan, UT (October 2012)

- Departmental funding for registration at the Association of the Advancement of Sustainability in Higher Education national conference

Evelyn Irving Memorial Scholarship: \$1,000 USD. USU QCNR, Logan, UT (August 2012)

- Awarded to upper-division student with an interest in service, as evidenced by participation in campus or community projects

Timothy Leary Scholarship: \$500 USD. USU QCNR, Logan, UT (August 2012)

- Awarded on the basis of leadership and demonstrated desire to help the underprivileged people of the world

USU Achievement of the Year: nominee. Robins Awards, Logan, UT (April 2012)

- The Robins Awards are the most coveted of all USU honors

ASUSU Academic Senator Scholarship: \$4,600 USD. USU, Logan, UT (September 2011)

PUBLICATIONS:

Thomas, B. (2012, September). *Use and availability of energy sources*. Quinney College of Natural Resources Student Highlights. Available at: <http://cnr.usu.edu/htm/blake-thomas>

Thomas, B., Tingey, B., & Brain, R. (2012, August). *Easy steps to reduce your energy bill*. USU Extension Sustainability Publication. Available at: http://extension.usu.edu/files/publications/publication/Sustainability_2012-02pr.pdf

Thomas, B. (2012, April). *Environmentalists are most dateable*. Utah Statesman. Available at: <http://www.usustatesman.com/column-environmentalists-are-most-dateable-1.2724215#.UIWTh45kLao>

Thomas, B. & Marsden, S. (2012, April). *ASB 2012-02 academic senate newsletter*. ASUSU Legislation. Available at: http://usu.edu/legislation/documents/doc_2011-2012_729.pdf

SERVICE:

Member. USU Students for Sustainability, Logan, UT (October 2010-December 2012)

Reviewer. Blue Goes Green student grant proposals submitted to USU Student Sustainability Office, Logan, UT (November 2011)

Volunteer. USU Student Organic Farm, Logan, UT (August 2010-September 2011)

Student Sustainability Liaison. QCNR Student Council, Logan, UT (January-May 2011)

Member. Student Organization for Society and Natural Resources (September 2010-May 2011)

Presentation Judge. Utah Envirothon, Brigham City, UT (April 2011)

Volunteer. Utah Association of Conservation Districts, Logan, UT (January-April 2011)

Volunteer. Navajo Nation, Tolagai, NM (July 2007-July 2009)

PROFESSIONAL DEVELOPMENT:

Restoring the West Conference. Logan, UT (October 2012)

- Attended to deepen understanding of sustainable economic development in rural communities
- Department of Environment & Society funded registration

Intermountain Bioneers. Logan, UT (October 2012)

- Attended to deepen understanding of fostering sustainable behavior change
- Department of Environment & Society funded registration

Intermountain Sustainability Summit. Ogden, UT (March 2012)

- Attended to showcase USU student sustainability efforts
- USU Student Sustainability office funded registration

CERTIFICATIONS:

Wilderness First Aid. National Outdoor Leadership School, Logan, UT (May 2011)

First Aid & CPR. American Red Cross, Logan, UT (May 2011)

Pesticide Applicator. Utah Department of Agriculture & Food, Logan, UT (May 2011)

ADDITIONAL SKILLS:

ArcGIS: Limited proficiency.

QuickBooks: Limited proficiency.

Navajo language: Intermediate writing and speech proficiency.

Guitar, banjo & vocal performance: Professional musician.

Heritage Cove Information:

This letter was submitted by Heritage Cove HOA president Ron Daines:



**Heritage Cove
Homeowners Association**

Ron Daines, President
40 Heritage Cove
435.770.3063
rjdaines@msn.com

Mr. Richard Anderson, Chair
Logan City Renewable Energy
& Conservation Advisory Board

Dr. Mr. Anderson,

My name is Ron Daines, and I'm the president of the Heritage Cove Homeowners Association. Heritage Cove is a 32-year-old, 10-home planned unit development at 700 North between 200 and 300 East.

I'm writing to you and members of the Logan City Renewable Energy & Conservation Advisory Board about residential solar, Logan City's 'solar farm' and the interest of our homeowners in solar energy.

In mid October, two of our homeowners installed voltaic cells, one an array of six 260-watt panels, array of 14 260-watt panels. The installation was Grimes, Go Sun Solar, who consulted on Logan's in October, five Heritage Cove homeowners names to the list of residents interested in buying through the yet-to-be-determined arrangement City solar farm.



rooftop photo-
the other an
done by Jason
solar farm. Also
added their
their energy
with the Logan

Our combination of solar development and solar interest, which reflects your mission to "...assist in transitioning the City of Logan toward a fully renewable energy portfolio...", has raised a couple of thoughts for the advisory board's consideration, one on the rate structure for the solar farm, and one on a possible solar study:

1. It is our understanding that the rate structure and logistics of residential connection to the solar farm have yet to be finalized. We have five homeowners who have expressed interest, but some may opt out, depending on how things are structured. Your board and Logan City Light & Power have probably already considered this, but from our perspective, it makes

sense to require residents to make a commitment to the solar farm with the return that, over the long run, their rates may fall. For example, a resident might pay a higher rate for the first three years (in essence helping the city defray its up-front investment in solar), but then, in stair-step fashion, the rate would decline. The longer the commitment, the greater the decline, to the point where a resident who has committed to the solar farm for seven years, for example, might be paying a rate lower than that for customers using power generated by traditional means. It seems that a resident who has committed to paying for clean, renewable energy should be rewarded.

2. Because two of our homeowners have installed solar and five others are interested in the solar farm, it has been suggested that Heritage Cove might make an interesting side-by-side comparison study of the two types of residential solar options currently available in Logan. The particulars of the study would have to be worked out by someone knowledgeable in such matters (perhaps a student or graduate student from USU). Our residents have expressed willingness to participate in such a study, including the two with rooftop installations. Also, Jason Grimes, who has done about a dozen rooftop solar installations within the City, said he, too, would be interested in participating. If such a study is feasible, it could be used to provide hard numbers as the city moves forward with the solar farm concept, and it could serve as a venue to generate publicity in the community about the value of solar installations.

We are happy to respond to your inquiries, and I would be amenable to attending an advisory board meeting on behalf of Heritage Cove if these thoughts are of any interest to you. I will be out of town on the first Wednesdays of both November and December, but am otherwise available.

Thank you for your consideration and for your work on behalf of Logan City.

Sincerely,

Ron Daines, President
Heritage Cove Homeowners Association
40 Heritage Cove
Logan, UT 84321
435.770.3063
rjdaines@msn.com

He then he retracted the letter after learning more about the program details stating the following concerns:

Hi Emily,

I took a closer look at Mark's note, and I guess I'm a little disappointed in, or at least confused by, Light & Power's motivations. The following paragraph stood out:

"One other thing to keep in mind is that we will only offer one (1) 100kW block per residential customer to allow as many people to participate as possible. Also, we will not offer these to the

commercial customers. They will have to participate in other ways such as the Green Power Blocks. They may want to consider their own installation as this will allow them to take advantage of tax credits as well."

I was under the mistaken impression that the solar farm would offer residents the opportunity to employ solar energy without having to install panels. In other words, it would be an economic choice, thus our suggestion in the letter that customers making a long-term commitment to the solar farm would ultimately get reduced rates, just as someone who installs rooftop collectors pays up front for the solar panels, but ultimately gets a return on that investment, after eight or nine years, of virtually zero cost for energy.

Under Light & Power's scenario, if a customer can only buy one 100 Kw block, then the only incentive is a kind of badge of environmental honor, one that says, "Gee, look at me, I'm buying solar."

We use 650 to 750 kw per month, so it doesn't make economic sense to buy only 1/7 of our energy as solar. Especially if we are paying twice as much without a long-term economic incentive to stay connected.

Given Light & Power's approach, I would say that both of our suggestions, the tiered rate schedule for solar-farm purchases and the solar comparison study for Heritage Cove, are essentially moot. The study only works if a household with rooftop solar can be compared with a household that essentially leases the bulk of its solar energy from the city.

So, I guess I'll withdraw the Heritage Cove letter and our recommendations.

Does what I've concluded make sense? Or have I misunderstood Light and Power's plans?

I'm leaving town Thursday for two weeks, but would be happy to discuss this further when I return.

Thanks for taking the time.

Best wishes,

Ron