

TREEDC NEWSLETTER

January - Volume 1



Quarterly Publication

2013

Upcoming Events

Jan 2013

TREEDC 2013
Membership Drive

Feb 22

TREEDC Forum: Hiwassee
College Madisonville, TN

March 12

TREEDC Forum (tentative):
Northeast Tennessee Forum

TREEDC ANNOUNCES 2013 MEMBERSHIP CAMPAIGN

TREEDC Chairman/University of Tennessee President Emeritus Dr. Joe Johnson and TREEDC President/Ducktown Mayor James Talley launched the 2013 annual membership drive on December 10, 2012. The goal of this campaign is to enroll 100 city and county mayors to the TREEDC membership. Benefits include an annual report, quarterly newsletters, technical assistance, sponsorship and speaking opportunities. The first forum in 2013 will be held at Hiwassee College on February 22. TREEDC also has a Founding Member category, which contains provisions for field visits, special events, legislative outreach and project development. Please contact TREEDC Membership Director, Monroe County Economic Development Director Shan Harris at shan.harris@monroegovernment.org for more information or click <http://www.treedc.us/membership/index.html>.



Pictured on right: TREEDC Membership Director Shan Harris, TREEDC Founding Member/Hiwassee College President Dr. Robin Tricoli and UT-MTAS Consultant/TREEDC Director Warren Nevad

TREEDC Holds Geothermal 101 Forum in Nashville, TN

Typically, a Tennessee Renewable Energy and Economic Development (TREEDC) forum consists of educational presentations and introductions regarding various renewable energy technologies available to our member communities. We call this “speed dating in renewable energy.” The TREEDC mayors hope to spark business relationships among our member businesses and communities across the state. On November 30, 2012, TREEDC used a different approach to bring more awareness in geothermal. The mayors held a Geothermal 101 forum that consisted of the best practices in geothermal across the state. A total of 42 attendees also learned about the various environmental and economic benefits associated with geothermal energy.



Speakers representing TREEDC members, Mid-State Construction, Trinity Contractors, Select Air Geothermal and Tetra Tech all stressed that schools, parks and county prisons were excellent opportunities for geothermal and that there is a critical need for more geothermal outreach and awareness in Tennessee. Representatives from 8 cities, 6 counties and staff from Tennessee Departments of Environment and Conservation and Economic and Community Development also heard about the TREEDC Energy Fund that can be used to help fund geothermal construction projects. Presentations and full report are available at http://www.treedc.us/newsletters_reports/forum_presentations/index.html

TREEDC RETURNS TO MEMPHIS FOR 3RD ANNUAL FORUM AT CHRISTIAN BROTHERS UNIVERSITY

On November 18, 2012, the Tennessee Renewable Energy and Economic Development Council (TREEDC) partnered with Christian Brothers University (CBU), Mirimichi Green, Tennessee Gas Association (TGA), Michael Brady, Inc. and the University of Tennessee (UT) Institute for Public Service (IPS) to conduct the 3rd annual community-wide renewable energy forum for Memphis area stakeholders. A total of 81 attendees learned about the various renewable energy related initiatives by CBU and prominent area businesses including Team Green Zone, Memphis Bioworks, Greene Turbine, PHG Energy and Inman Solar.

Christina Treglia, Manager of the Tennessee Department of Environment & Conservation Department (TDEC) Sustainable Government Program gave an overview of TDEC'S Clean Energy grant program funding for year 1 including the Covington waste to energy project. Chris Koczaja, PHG Energy Vice President of Sales & Engineering presented a powerpoint presentation that illustrated how PHG Energy converts wastes to energy. He stressed that the PHG Energy does not use incineration. Their scalable downdraft gasifier converts crop residues, scrap tires and sludge into syngas. The key is to having feedstock with 30 percent or less moisture. The Covington Wastewater project will divert over 300 tons a month from landfill and save over 452 tons of CO2 Emissions per year.

Continued.....

Biochar is also created from the process. It is stable and has secondary uses. TREEDC will organize a tour of the facility with PHG Energy at the Tennessee Municipal League Annual Conference in Memphis in June 2013.

Pat Riley of TREEDC Gold Member Tennessee Gas Association and Gibson County Utilities highlighted the environmental and economic benefits of natural gas as an alternative transportation fuel for local government's fleets. He advised the crowd that the TREEDC energy fund program would aid local governments to bundle their developmental projects regarding the construction of compressed natural gas stations and vehicle conversions.

Rich Peterson gave an overview of TREEDC Founding Member Mirimichi Green. This organization is a sister company to Mirimichi Golf Course owned by entertainer and film star Justin Timberlake. Peterson stressed that the Timberlake family wants to be ambassadors for the environment. Mirimichi Green has currently developed and implemented comprehensive and advanced sustainability programming, and is one of the most recognized and award winning golf courses in the world for these efforts. Mirimichi Green uses a process that merges sound science with sustainability to implement innovative, resourceful and effective solutions.



From left to right: Memphis Councilman/TREEDC Board Member Edmund Ford, Jr.; TREEDC West TN Coordinator/Covington Mayor David Gordon; Sean MacInnes, Christian Brothers Univ; Chris Koczaja, PHG Energy; Pat Riley Tennessee Gas Association, Jackson Councilman/TREEDC Legal Affairs Ernest Brooks, II; Geoff Greene, Greene Turbine; Christina Tegrelia, TDEC; Warren Nevad, MTAS/TREEDC; Dr. Rajesh Sharma, Arkansas State University; Dr. Ben Jordan, Christian Brothers University; Rich Peterson, Mirimichi Green; Jeff O'Connor, Inman Solar; Dr. Steven Bares, Memphis Bioworks; Pauline Vernon, Memphis Bioworks and Chris Williams, Pathway Lending



TREEDC FOUNDING MEMBER PATHWAY LENDING ANNOUNCES SUSTAINABLE COMMUNITIES INITIATIVE

During the TREEDC-Memphis Forum, TREEDC Founding Member Pathway Lending announced a commitment of \$10 million through the Sustainable Communities initiative to provide financing for energy efficiency improvements for businesses located in Memphis and Shelby County. This initiative will help more area businesses be able to implement energy efficiency projects and achieve long-term energy cost savings. This loan program is a public-private partnership between TREEDC Mayors AC Wharton, Jr. and Mark Luttrell, the Joint Offices of Sustainability, and Pathway Lending. According to Memphis and Shelby County Sustainability Director Paul Young, this partnership is also designed to provide the necessary tools and resources to motivate individuals in the community to make their homes and businesses more energy efficient.

TREEDC Member cities Knoxville and Nashville City Knoxville and Pathway Lending also announced similar initiatives during November 2012.



TREEDC PARTNERS WITH THE UNIVERSITY OF TENNESSEE CHATTANOOGA



From left to right – David Gustashaw, Volkswagen, Dr. Will Sutton, UTC, Janie Robbins, Tennessee Tech, Dr. Prakash Dhamshala, Dr. Ericka Burke, Wacker Polysilicon Warren Nevad, MTAS/TREEDC, Dina Gouge, Michael Beady, Inc. Don Leopard, Global Green Lighting, Larry Stephens, Michael Brady, Inc, Robbin Russell, Signal Energy

On October 12, 2012, the Tennessee Renewable Energy and Economic Development Council (TREEDC) partnered with the University of Tennessee at Chattanooga, Tennessee Gas Association (TGA), Signal Energy Contractors, Michael Brady, Inc., and the University of Tennessee (UT) Institute for Public Service (IPS) to conduct a community-wide renewable energy forum in Southeast Tennessee. A total of 71 attendees gained knowledge on the various renewable energy related initiatives by UTC and prominent area businesses including Alstom Power, Volkswagen, Wacker Polysilicon and Global Green Lighting. Attendees also learned about creative renewable energy related financing measures for public entities and TREEDC members in alternative energy. UTC Professors Prakash Dhamshala, James Hiestand and MTAS Consultant Warren Nevad developed the agenda that also included educational presentations from representatives with the UT Center for Industrial Services, Ameresco, Piper Communications, and ARiES Energy.

Signal Energy Vice-President Robbin Russell discussed their wind energy projects in Oklahoma and also their work with the 5-megawatt solar farm in Haywood County. The Signal Energy team has completed dozens of full design/build renewable energy projects across the United States, and in Canada, including over 10% of the wind turbines domestically, and over 130MW of solar power capacity.

The next set of speakers discussed opportunities for renewable energy in Tennessee. Bobby Hicks and Jay Baker representing Alstom Power gave a summary of the geothermal, ocean energy, biomass, hydroelectric and wind projects conducted by Alstom Power all over the world. Alstom Power has over 6,000+ permanent employees in 45 states and the District of Columbia. TREEDC Founding Member Ameresco Regional Director Stu Shunk informed the group that over the past decade, Ameresco has implemented \$100 million dollars of Energy Savings Performance Contracting in the State of Tennessee alone.

Pictured right: David Gustashaw, Volkswagen addresses the audience in Chattanooga



TREEDC Financial Consultant, Bill Owen, gave a presentation about the Energy Fund. TREEDC is partnering with TREEDC Gold Member TGA to develop a pooled bond program to fund capital costs relating to conversions and compressed natural gas vehicles across the state. Potential borrowers will be strictly screened to determine the optimal amount of capital needed. Loans will be sized to fall within existing revenue streams and will be repaid through the savings enjoyed by the borrower.

During the networking lunch session, David Gustashaw with Volkswagen explained that Volkswagen's Chattanooga manufacturing plant received a platinum LEED certification from the U.S. Green Building Council. The facility is the first and only automotive manufacturing plant in the world to receive the Platinum certification. He reviewed various features of the plant that helped Volkswagen earn this distinction.

Bob Patterson of the Tennessee Gas Association and PBG Energy highlighted the environmental and economic benefits of natural gas as an alternative transportation fuel for local government's fleets. Global Green Lighting President, Don Lepard, informed the audience that in April 2011 Chattanooga was the First City in the United States to deploy on a large scale, low energy lighting with Smart Grid technology, creating additional energy saving, further maintenance cost reduction, increased reliability, and security features to make the environment safer. Over 300 LED and Induction lights, all containing the wireless Lighting Control system have been successfully deployed and monitored. With average annual savings of over \$2,750,000, the Chattanooga system pays for itself within 7 years.

Harvey Abouelata, President of ARiES Energy also gave a detailed powerpoint illustrating the significant environmental progress exhibited by Wampler's Sausage. The Wampler's 30kW and 500kW solar systems produce a total of 694,410 kilowatt hours annually. The Cellulose to hydrogen energy system (CHyP) being developed for Wampplers will produce 3,985,800 kilowatt hours annually.

TREEDC PARTNERS WITH TENNESSEE SOLAR ENERGY ASSOCIATION



On October 18, 2012, TREEDC partnered with the Tennessee Solar Energy Association to conduct a community solar workshop at the University of Tennessee Conference Center. City officials from Spring City, Knoxville and Kingston heard presentations by experts in the local area presenting information on solar installations, solar kits and some of the code issues that installers will face. The workshop started at 6 pm and ended at 9:15 pm with a question and answer session lead by the solar expert presenters. In addition to the lectures, the attendees received a manual containing articles from Home Power magazine. Home Power magazine has done an excellent job of describing issues with installing renewable resources such as solar, wind, micro hydro and biomass. The plan was for forty attendees and we ended up with 55 attendees. Requests for additional workshops from those who could not make the workshop or who had not heard about the workshop in time to register will be addressed by holding this workshop at other parts of the state.



Tennessee Solar Energy Association workshop

TREEDC STARTS INTERNATIONAL EXCHANGE PROGRAM



Philippines

Kenya



Germany

INTERNATIONAL EXCHANGE PROGRAM Continued....

During the October 4th annual board meeting, the TREEDC Mayors created the International Exchange Program to help cultivate technology and informational exchange among TREEDC's business, colleges, local government and state agency members with international renewable energy related counterparts. Many Tennessee renewable energy firms conduct business overseas and the mayors of TREEDC desired to help advance their business plans by engaging other countries to help start similar grassroots outreach endeavors. The TREEDC mayors also wanted to follow the Tennessee Department of Economic and Community Development's (ECD) lead in actively courting international businesses to seek opportunities in Tennessee. TREEDC is working with member businesses Ameresco, ARiES Energy, Energy Source Partners, Greene Turbine, Harrelson & Associates, 49 Green, Mirimichi Green, PHG Energy and Tetra Tech to help open up other markets in the Philippines, Germany, Kenya and other countries to be identified in the TREEDC International Exchange Program.

On November 12, 2012, the German Energy Agency, TREEDC Founding Member Vis-Solis and German solar tracking manufacturer, Deger Energie met with TREEDC President/Ducktown Mayor James Talley, TREEDC East Tennessee Coordinator/Kingston Mayor Troy Beets, MTAS Program Manager Pat Hardy, and IPS Assistant Vice President Steve Thompson to learn more about our region's solar assets and to develop international partnerships. The German Energy Agency develops flagship projects for German renewable energy in the field of photovoltaic, solar cooling and solar thermal energy. All of the solar roofs developed by the German Energy Agency are designed as public private partnerships and co-financed by the German Federal Ministry of Economics and Technology. Since 2004, 40 projects have been developed in Australia, Brazil, Canada, China, France and South Korea and many other countries. As a result of the visit, the German Energy Agency is an official member of TREEDC.



TREEDC Officials meet with Deutsche Energie-Agentur GmbH (dena)-German Energy Agency on November 12, 2012- from left to right – Cortney Piper, Piper Communications; TREEDC President James Talley; Steve Levy, Tennessee Solar Energy Association, TREEDC East TN Coordinator/Kingston Mayor Troy Beets; Warren Nevad, MTAS/TREEDC; Jessica Klein, Director of Renewable Energy for German Energy Agency; Tim Hayes, Vis-Solis; Larry Stephens, Michael Brady, Inc.; Carlos Mayer, Vis-Solis; Pat Hardy, MTAS

INTERNATIONAL EXCHANGE PROGRAM Continued....

TREEDC Director Nevad also met with officials from the Philippines Department of Energy, Renewable Energy Association of the Philippines, Biomass Energy Association of Philippines, solar and tidal power generation entrepreneurs and officials from the University of Philippines during the 3rd quarter of 2012. The objective of the fact-finding mission was to build a foundation of trust and cooperation in order to develop long-term relationships with renewable energy related stakeholders in the Philippines. The TREEDC International Exchange program is also designed to give prospective partners dialogue on how to replicate a similar TREEDC model.



Philippine Delegation – front row left to right –seated - Celestino Damian, President of Biomass Energy Association of the Philippines; Warren Nevad, TREEDC; Oly Serafica, President of Renewable Energy Association of the Philippines; back row -Roland P. Vasquez, CEO, RPV Electro Technology Phils. Inc.; John Chavez - Engr., Edward Marcs Phils. Inc; Jefferson Unabia - Head, Engg. Services, Edward Marcs Phils, Inc; Benegildo Mendoza President, Land-based Tidal Systems; Erwin C. Serafica Consultant, Asian Development Bank, Clean Technology Fund; and Erel Narida President, One Renewable Energy Enterprises

During the visit, the history and origins of TREEDC and Renewable Energy Associations of the Philippines were reviewed. The visit was very successful and TREEDC President Talley and Nevad were invited to meet with more renewable energy stakeholders in the Philippines during March 2013 to discuss memorandums of cooperation, organize an International TREEDC forum and to develop sister cities relationships. The Renewable Energy Association of the Philippines also became an official TREEDC member as a result of the visit. For more information, contact warren.nevad@tennessee.edu. TREEDC Finance Consultant Bill Owen is organizing the work of the International Exchange Program in Kenya to help advance solar and biomass gasification in Africa. Please contact wandgowen@aol.com if you have suggestions. A report will be issued at a later date.



TREEDC HOLDS ANNUAL BOARD MEETING

The TREEDC Executive Committee held its annual meeting at Ducktown City Hall on October 4, 2012. The Board amended its bylaws to create a new board position of K-12 Schools Coordinator. The Board appointed Memphis City Councilman Dr. Edmund Ford, Jr. to this post. The board adopted the 2013 dues schedule that remains unchanged from 2012 with the exception of lower annual dues of \$100 for K - 12 schools, colleges and public power and natural gas distributors. The annual dues for all local governments in Tennessee remain at \$100. Other business conducted included changing the Director's job to an appointed position, the adoption of the TREEDC International Exchange Program, 2013 Budget, 2013 Calendar of activities and updates on partnerships with TVA and the Tennessee Gas Association.



TREEDC's newest board member: Memphis Councilman Dr. Edmund Ford, Jr.

TREEDC HOLDS STRATEGIC PLANNING RETREAT WITH TDEC, ECD AND TVA

On October 4- 5, 2012, TREEDC held a 2013 goal setting session with Founding Members Tennessee Valley Authority, Tennessee Tech University, The University of Tennessee Institute for Public Service, County Technical Assistance Service, Tennessee Department of Environment and Conservation and Economic and Community Development. MTAS Management Consultant Margaret Norris was the facilitator and was superb. The participants reviewed TREEDC's 2012 goals and plotted a path for 2013 starting with addressing which issues needed more work and identifying which ones were either accomplished already or did not need to be pursued further.

Using a voting system, the group narrowed the list considerably and the end result was three restated goals with more specific objectives. The 3 goals are:

- GOAL #1: Create Green Certification for Local Governments;
- GOAL #2: Increase Revenues and Program Funding Opportunities by 50%; and
- GOAL #3: Identify Leaders as Potential TREEDC Champions.

PLANNING RETREAT

From left to right – seated – Molly Crips, ECD; Lori Munkeboe, TDEC; Kathy Glapa, TDEC; Bill Owen, TREEDC and TREEDC mascot – Miss Sarah; standing – left to right – Dennis Tennant, Tennessee Tech, Mary Gill, Tennessee; Jackson Councilman/TREEDC Legal Affairs Director Ernest Brooks, II, Kim Raia, CTAS; Graysville Commissioner/TREEDC Board Member Andy Beene; TREEDC Board Member Shan Harris; Steve Thompson, IPS and Scott Slusher, ECD



TREEDC PARTICIPATES AT ARKANSAS STATE UNIVERSITY RENEWABLE ENERGY CONFERENCE



TREEDC Director Warren Nevad gave a presentation on November 5, 2012 regarding the origins and projects of TREEDC. 95 attendees also heard presentations from officials representing Sharp Solar, Wal-Mart and Mississippi Technology Alliance. The conference also contained information about biomass feed stocks and biofuels, conversion and processing methods for bio-based products, materials and methods for harnessing solar energy, solar photovoltaic, nanomaterial in energy applications, hydrogen production, advances and applications of wind energy, energy conservation and efficiency, energy transmission and distribution, and energy economics. Congratulations to Arkansas State for putting together a very successful conference.

MISSISSIPPI STATE UNIVERSITY JOINS TREEDC

The TREEDC mayors are proud to announce that the Mississippi State University Office of Entrepreneurship and Technology Transfer (OETT) has joined as a member of TREEDC. This office is responsible for boosting the university's efforts to efficiently capture, protect, manage and accelerate the commercialization of university-owned and student-generated intellectual property (IP). The IP stems from new ideas, inventions, software and other creative works generated by research and other scholarly activity. The OETT team seeks to serve the university and its stakeholders by facilitating the transition of IP to the marketplace. TREEDC has been working with OETT to help advance the White Reactor development in various landfills in the region. TREEDC Founding Member Harrelson & Associates has been working diligently to commercialize the process of converting syngas created by a gasifier to hydrocarbons.



TETRA TECH JOINS TREEDC AS A FOUNDING MEMBER



In an alliance to help foster the growth of geothermal in Tennessee, Tetra Tech has joined TREEDC as a founding member. Tetra Tech is a leading provider of consulting, engineering, and technical services worldwide. Tetra Tech has 330 offices worldwide and will be working with TREEDC to advance the International Exchange Program with our partner countries.

Tetra Tech provides environmental, design, and construction support for the expanding utility-scale geothermal generation and smaller scale combined heat and power plant geothermal solutions. Their work keeps abreast of the latest policies, regulations, practices, technologies, and trends in the industry. Tetra Tech has the financial strength and expertise to assist with any size geothermal project in Tennessee.

TREEDC FOUNDING MEMBER TENNESSEE VALLEY AUTHORITY CREATES RENEWABLE ENERGY INFORMATION EXCHANGE GROUP



TVA's March, 2011 Integrated Resource Plan (IRP) recommended that TVA "Analyze renewable technologies and business models and monitor market trends for the strategic options to develop cost-effective renewable resources." As a result, TVA has created the Renewable Energy Information Exchange Group (TV-RIX). According to Patty West, TVA Director, Renewable Energy Programs, the purpose of the TV-RIX is to discuss the renewable energy landscape, specific renewable technologies and corresponding business models that will lead to the development of cost-effective renewable energy resources, primarily at a regional level. Participants in TV-RIX will be asked to exchange and provide information on market trends, technologies and business models that will help form TVA's renewable energy direction. Participants also will be asked to help identify gaps and signposts that should be monitored as a bridge to the next IRP, scheduled to begin no later than 2015. In addition, TVA may hold specific renewable technology meetings inviting developers, financiers, and other experts in specific technology areas. TREEDC is proud to be invited to serve on this TVA Exchange Group. Details to follow.

2013 TREEDC Calendar

Forums: 8:30 am to 12:00 follow by lunch

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| Feb. 22 | Madisonville, TN - Hiwassee College, 2 nd annual TN TREEDC Forum | June 22 | Memphis, TN - Tennessee Municipal League Workshop |
| Mar. 12 | Kingsport, TN - Northeast TN Community TREEDC Forum | July 9 | Franklin TN – Columbia State College/ City of Franklin TREEDC Breakfast |
| April 22 | Jackson, TN - City of Jackson/Jackson Energy Authority TREEDC Breakfast | July 26 | Cookeville, TN – Tennessee Tech 3rd annual TREEDC Forum |
| April 30 | Nashville, TN – Update to Tennessee General Assembly | Aug. 14 | Knoxville, TN – TREEDC Luncheon |
| May 17 | Huntingdon, TN - Bethel University, TREEDC Forum | Oct. 3 | Ducktown, TN - Annual TREEDC Board meeting/strategic planning retreat with State of Tennessee ECD, TDEC and Tennessee Valley Authority |
| June 12 | Clarksville, TN - Austin Peay State University TREEDC Forum | Nov. 2 | Chattanooga, TN – 2 nd annual TREEDC Forum |