

The Voice

JANUARY 2011

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The Green Fuels Revolution: A Leadership Role for Engineering Firms

by Joanna D. Underwood
President, Energy Vision
New York, NY

One of the greatest technology revolutions that will occur this century is the "green fuels" revolution: the shift in transportation from reliance on high-carbon petroleum-derived fuels to reliance on the renewable pollution-free fuels. Engineers and their firms can help lead this transition by working



Joanna Underwood

with municipalities and corporations to end their fleets' dependence on gasoline and diesel fuels and find green fuels solutions.

The transition to alternative fuels is vital to the United States. The U.S. consumes almost one-quarter (1/4) of the oil consumed globally and is reliant on imports for 67% of the supply it uses. More than 40% of these imports come from nations

Note: Energy Vision is a non-profit organization. Underwood has been a featured speaker at ACEC national conferences and meetings. Visit www.energy-vision.org.

that can be unfriendly to U.S. interests. Our country is more vulnerable to price fluctuations and possible supply disruptions than any other nation.

Municipalities and companies can count less and less on oil for fuel. While oil-derived fuels power 97% of our 255 million vehicles, continued reliance on diesel-powered municipal fleets is especially risky. Today, diesel fuel powers most refuse and recycling fleets, bus transit and school bus fleets, and construction equipment. However, over the last two decades, not only did global oil supplies dwindle, but competition for oil increased with China, India and other industrializing nations. Another price spike or a major supply disruption would wreak

havoc on life in every U.S. community and on the overall economy as happened during the 1973 oil embargo.

The Role of Engineers

Municipalities turn to engineering firms for critical planning and design tasks. This gives engineers the opening to discuss with municipal officials the green fuels opportunities that will produce environmental and economic benefits.

(continued on page 2)

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What I Have Learned in Six Months

by Steve Bostic, PE
President, ACEC of Tennessee

Since I took office as president of ACEC of Tennessee in July 2010, I have learned many things about this organization and its members. While I've been an active member for many years, as ACEC president, I gained new understanding and insights about ACEC and its importance to our profession and firms.

I've learned that ACEC is a highly respected organization. Through my conversations and meetings with many public officials, business and civic leaders, and officers and executives of kindred organizations, I have learned that what ACEC says and does makes a difference. The opinion and perspective of ACEC have an impact on legislation, regulations and public policies that protect public safety and welfare.

I've learned that ACEC is at work every day.



Steve Bostic

ACEC is not just busy when it is time for annual meetings or conferences. ACEC in Tennessee and nationally is continually communicating, working and reaching out to leaders, policymakers and educators. It provides programs, services and resources that meet the needs of future engineers, engineering firms and the profession.

I've learned that ACEC is about teamwork. We are very fortunate to have Candy Toler and Judy Logue on staff in Tennessee. The national staff is equally impressive. However, ACEC of Tennessee is a volunteer-driven organization which means that it requires the volunteer efforts of many people serving on the Board and numerous committees to get the job done.

Finally—and most of all, I have learned that there is a large group of people that is very dedicated to ACEC and the engineering profession. This group generously supports ACEC with time, money and resources. It is their commitment and effort that makes ACEC successful and benefits our firms and profession. My wish in the New Year is that every ACEC member becomes part of this group.

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Green Fuels Revolution *(continued from page 1)*

In air pollution-related work, engineers can propose assessing the emission reductions, oil displacement and cost implications of shifting refuse fleets to natural gas. When drawing up solid waste contract specifications, they can suggest language mandating use of natural gas fuel trucks. When dealing with wastes, they can propose inventorying local organic wastes for producing renewable natural gas and analyzing the gas potential. When the focus is on sewage treatment plants, they might propose processing its gases to produce renewable gas fuel for fleets. When the project is a landfill expansion, engineers can suggest gas collection and refinement or construction of a digester for the organic fraction of the wastes.



Statewide Learning— Attorney David Garst addresses the Nashville session of the annual professional liability seminars presented in December by Crow Friedman Group and sponsored by ACEC of Tennessee, AIA and TSPE. Approximately 150 engineers and architects attended seminars that were presented in Knoxville, Nashville and Memphis.

The most important option for municipalities is to run their service fleets on secure, domestically-plentiful, and cleaner natural gas. Several thousand natural gas refuse trucks and more than 15,000 transit buses are already on the roads of cities including Los Angeles, Seattle and New York. The shift to natural gas means greater energy security plus reductions of 60 to 80% in air pollution and 25% in greenhouse gases. It also paves the way for transitioning to the renewable form of natural gas—biomethane—made from organic wastes thrown away by homes, restaurants, hospitals and industries.

Figures tell the story of the potential for renewable green fuels. An Energy Vision analysis found that New York City's wastes (3 million tons sent for out-of-state disposal for \$325 million annually) could produce fuel for 10,000 heavy duty vehicles for more than two decades.

Engineers, who understand the shift away from petroleum-based fuels, can be real leaders in supporting the change that can contribute significantly to a sustainable future for our country.

MEMBER NEWS

- Ashley T. Smith has joined the Nashville office of Stantec as a project engineer in the Environmental Management Group. Smith is the current president of the American Society of Civil Engineers Nashville Branch.
- Gary W. Curtis, who has 32 years of experience in the energy industry, has joined Barge Waggoner Sumner & Cannon, Inc. (BWSC), as Vice President and Director - Energy and Environment.

Judges Announced

An independent panel of judges will meet in February to judge the 25 projects entered in the 2011 *Engineering Excellence Awards* (EEA) competition. Winners of the awards will be announced on the evening of March 8 during a banquet at the Loews Vanderbilt Hotel, Nashville.

A *Grand Iris Award* will be presented to the overall winner of the competition. A *Grand Award* will be presented in each entry category.



The eight people serving on the *Engineering Excellence Awards* panel of judges are **Daniel A. Badoe, PhD**, professor of Civil Engineering, Tennessee Technological University, Cookeville; **Peter Heidenreich**, consultant, Hall Strategies, Nashville; **W. Marlin Keel, PE, RLS**, director of public works and city engineer, Mt. Juliet; **J.T. Malasri**, residential Level 4 engineer, Memphis Light, Gas & Water, Memphis; **Dayakar Penu-madu, PhD**, head of the Civil and Environmental Engineering Department, University of Tennessee, Knoxville; **Michael Skipper**, executive director, Nashville Area Metropolitan Planning Organization (MPO), Nashville; **Ipshita Thomas, EI**, 2009 ACEC Scholar of the Year; and **Scott Turnbow**, senior manager, Tennessee Valley Authority (TVA), Chattanooga.

"We are very grateful to our judges for their service," said awards program chair Steven Field, PE, Stantec Consulting Services, Inc. "It requires a full day of their time to review all the entry notebooks and panels and to determine the winners."

Last year, more than 250 people attended the awards banquet including federal, state and local officials, business leaders, and engineers. Invitations to the March 8 awards banquet will be mailed in early February noted awards program co-chair Greg Brubaker, PE, K.S. Ware & Associates.

Winner Wins Again!

In March 2010, Wilbur Smith Associates won ACEC of Tennessee's *Grand Iris Award for Engineering Excellence* for its work on the SmartFIX40 project in Knoxville completed for the Tennessee Department of Transportation. This project continues to be a winner! The National Partnership for Highway Quality recently selected SmartFIX40 to receive its national Gold Award for "Making a Difference - Public Communications." In addition, the American Association of State Highway and Transportation Officials Subcommittee on Public Affairs selected SmartFIX40 as one of its Excel Award winners for best public outreach and communications work by a state department of transportation.

"The *Grand Iris Award* from ACEC of Tennessee marked the beginning of a series of honors that have come to the SmartFIX40 project," said Jerry Stump, PE, with Wilbur Smith Associates, Franklin, and national chairman of ACEC. "The additional awards presented for SmartFIX40 indicate the caliber of projects competing for *Engineering Excellence Awards* honors."

He added, "I look forward to attending the 2011 awards event on March 8 when the outstanding work of Tennessee engineering firms is again honored."

2011 EEA Entrants

(arranged by project title)

- An Innovative Solution - The DDI Interchange**, Alcoa, TN: Gresham, Smith and Partners for City of Alcoa and Tennessee Department of Transportation;
- Barnhart Super Heavy Haul**, Knoxville, TN: Wilbur Smith Associates for Barnhart Crane & Rigging Co.;
- Biologically Enhanced High Rate Clarification**, Knoxville, TN: Camp Dresser & McKee, Inc. for Knoxville Utilities Board;
- Cedar Springs Presbyterian Church Parking**, Knoxville, TN: Cannon & Cannon, Inc. for Cedar Springs Presbyterian Church;
- Clayton Center for the Arts**, Maryville, TN: Ross Bryan Associates, Inc. for McCarty Holsaple Holsaple Architects;
- CONRAC Deep Foundation Investigation**, Nashville, TN: K.S. Ware & Associates, LLC for Metropolitan Nashville Airport Authority;
- CSXT Emergency Response for Flood Repairs**, Kingston Springs, TN: AMEC Earth & Environmental, Inc. for CSX Transportation;
- Dollywood Access Study**, Pigeon Forge, TN: Wilbur Smith Associates for Dollywood;
- Gay Street Streetscapes**, Knoxville, TN: S&ME, Inc. for City of Knoxville;
- Gay Street Streetscapes Improvements**, Knoxville, TN: Vaughn & Melton Consulting Engineers, Inc. for City of Knoxville;
- GIS Mapping - Stormwater Outfalls on State Highways**, various locations, TN: EnSafe Inc. for Tennessee Department of Transportation;
- I-75 Widening and Interchange Reconstruction**, Ooltewah, TN: H.W. Lochner, Inc. for Tennessee Department of Transportation;
- Knoxville Utilities Board 2nd Creek Wastewater Storage Facility**, Knoxville, TN: Gresham, Smith and Partners for Knoxville Utilities Board;
- Little Chatata Creek Realignment**, Cleveland, TN: S&ME, Inc. for Cleveland Municipal Airport Authority;
- Pedestrian Underpass at Lane College**, Jackson, TN: CSR Engineering, Inc. for Lane College;
- Pilot Test - Extreme Degradation Conditions**, Tampa, FL: EnSafe Inc. for Helena Chemical Company;
- Rebuilding Caruthers High School**, Caruthersville, MO: Askew Hargraves Harcourt & Associates, Inc. for J. J. Bullington;
- Runway 2L-20R Reconstruction**, Nashville, TN: Garver Engineers, LLC for Metropolitan Nashville Airport Authority;
- Schermerhorn Groundwater Removal System**, Nashville, TN: Barge Waggoner Sumner & Cannon, Inc., TTL, Inc. and I.C. Thomasson Associates, Inc. for Schermerhorn Symphony Center;
- Shelby County Greenline**, Memphis, TN: Tetra Tech, Inc. for Ritchie Smith Associates and Shelby County, TN;
- Stream Restoration at Bristol Motor Speedway**, Bristol, TN: S&ME, Inc. for Bristol Motor Speedway;
- Tag Along Creek Drainage Improvement Study**, Lacombe, LA: Neel-Schaffer, Inc. for St. Tammany Parish, Louisiana Government;
- Tennessee River Modeling**, Tennessee River Watershed, VA, NC, TN, GA, AL: Barge Waggoner Sumner & Cannon, Inc. for Tennessee Valley Authority;
- Teton Trek Exhibit**, Memphis, TN: SSR Ellers, Inc. for Memphis Zoological Society;
- Water Treatment Plant Raw Water Reservoir Rehabilitation**, Franklin, TN: AECOM for Water Management Department, City of Franklin

CALENDAR

JANUARY

14

EEA Entry Notebooks & Panels Due

JANUARY

21

ACEC Scholarship Applications Due

FEBRUARY

20-26

60th Annual Engineers' Week
Engineers Make a World of Difference

MARCH

7

Legislative Reception
5:30 p.m., Sheraton
Downtown Nashville

MARCH

8

Engineers Day on the Hill
9:00 a.m., State Capitol

MARCH

8

Engineering Excellence Awards Banquet
6:00 p.m. - 9:00 p.m.
Loews Vanderbilt Hotel, Nashville

MARCH 30 -

APRIL 2

ACEC Annual Convention & Legislative Summit
Washington, D.C.



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**JANUARY 2011
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NEW MEMBER**

AFRAM Corporation
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Key Contact:
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AFRAM offers a full range of construction program/project management, construction inspection, multi-disciplined engineering design, site development, planning and development, cost estimating / CPM scheduling, land surveying and material testing.

F R O M T H E E X E C U T I V E D I R E C T O R

Opportunities Are Here; Sign Up Now!

by Candy Toler
Executive Director, ACEC of Tennessee

Our state has a new governor, commissioners, legislators and staff. All these changes give us the perfect opportunity to educate our elected and appointed officials about engineering issues affecting the health, safety and welfare of Tennesseans.

At two upcoming events, engineers can talk directly with state decision makers, promote the value that engineers bring to every Tennessee community, and address issues that impact the public and the engineering profession. On Monday evening, **March 7**, the ACEC Nashville

Chapter will host a **Legislative Reception** beginning at 5:30 p.m. On Tuesday morning at 9:00 a.m., **March 8**, it's time for *Engineers' Day on the Hill*.

Join your colleagues from across the state at both events. Elected representatives really do appreciate the opportunity to hear from you. **Sign up by March 1.** You can register to participate with an email to me (ctoler@tnec.org). **OR** you can complete the registration form on ACEC's web site (www.acectn.org). **OR** you can complete the form below and send it by FAX.

March 7 and March 8 are important opportunities for the Tennessee engineering community; your participation is needed.

Registration for March 7 & 8 Events

- Yes!** I will attend ACEC's Legislative Reception on **March 7**.
- Yes!** I will participate in *Engineers' Day on the Hill* on **March 8**.
 - Yes, I will attend the complimentary luncheon after *Day on the Hill*.
 - No, I will NOT attend the luncheon.



Name: _____ E-mail address: _____
 I live in the district of State Representative _____
 I live in the district of State Senator _____
(If you do not know, tell Candy Toler your home address and she'll help you figure it out.)
Please FAX a copy of this completed form by March 1 to 615-254-1923 or email this information to ctoler@tnec.org. Thank you.