

**CITY OF SCOTTSDALE
ENERGY ADVISORY COMMITTEE
ENVIRONMENTAL QUALITY ADVISORY BOARD**



**WEDNESDAY, AUGUST 6, 2008
CIVIC CENTER LIBRARY - GOLD ROOM
3839 N. DRINKWATER BLVD.
SCOTTSDALE, ARIZONA**

SUMMARIZED MEETING MINUTES

- PRESENT:** Jim Mulloy, Chairman
Brian O'Donnell, Committee Member
Bill Sheaffer, Committee Member
Richard Stegeman, Committee Member
- ABSENT:** Jimmy Leung, Vice Chair
Keith Thompson, Committee Member
Dave Walker, Committee Member
- STAFF:** Chuck Skidmore, Energy Management Engineer
Victor Valliere, Planning and Development Services
Joey Miller, Planning Department Intern
Anthony Floyd
- OTHERS:** Jeff Hassannia, Diversified Energy
Steve Schenk, Diversified Energy
Dave Huff
Dave McDonald

Call to Order

Chair Mulloy called the meeting to order at 7:37 a.m. A roll call confirmed members present as stated above, noting the presence of a quorum.

Public Comment

None.

1) Approval of Minutes

COMMITTEE MEMBER SHEAFFER MOVED TO APPROVE THE MINUTES OF THE JUNE 4, 2008 MEETING. COMMITTEE MEMBER O'DONNELL SECONDED. THE MOTION CARRIED UNANIMOUSLY BY A VOTE OF FOUR (4) TO ZERO (0).

2) Presentation by representatives of Diversified Energy on the latest technology available for turning municipal wastes into useable products and energy sources, while reducing the City's carbon footprint.

Chair Mulloy invited Mr. Hassannia and Mr. Schenk to discuss new technology that may eventually benefit Scottsdale. The guests represented Diversified Energy, a Gilbert company that focuses exclusively on renewable energy. It is involved in three general areas, biofuels, gasification and green chemicals. Besides providing engineering and technical services, it identifies technologies for further development and commercialization. The company assesses the technologies available, and then lays out a plan for commercial and government entities to implement. It can perform economic analysis and sensitivity trades.

Diversified Energy favors technologies that have feed stock flexibility, and can produce multiple outputs, over traditional corn-based ethanol or bio-diesel as it is made today. The goal is to make a fuel that comes from a renewable source, but can act and look like traditional gasoline, or that has the properties of traditional natural gas.

Diversified Energy recently licensed a new gasification process called HydroMax. Gasification is a combustion process in an oxygen-starved environment. The output is called syngas, which is a hydrogen/carbon monoxide mixture. Syngas is a building block that can be used to generate electricity, make liquid transportation fuels, maximize hydrogen production, and make chemicals.

HydroMax uses a molten bath of iron and tin in a reactor to release syngas. It allows for the gasification of a wide variety of feed stocks from almost any carbon source, whereas most traditional gasifiers are optimized for certain types of feed stocks. It also produces a syngas that is much cleaner than traditional gasifiers. The technology scales down to industrial applications very economically. Diversified Energy is about three to five years away from having a commercial product to offer the marketplace.

Diversified Energy is also developing Centia, a catalytic-based biofuels production process that can utilize any triglyceride source. The finished biogasoline, bio jet fuel, and biodiesel products all have the combustion, chemical, and kinetic properties of traditional petroleum. A burner has also been developed that captures the heat from glycerol to make energy.

Access to feed stock is a big issue in renewable energy today. Prices have skyrocketed. From 70% to 80% of biofuel production expense comes from feed stock costs. Algae have been suggested as an alternative. Diversified Energy is also co-developing simgae, in which polyethylene tubes are used to grow algae at a low cost.

Mr. Schenk provided a technical review of the HydroMax process, and discussed its features and benefits. It uses a simple and proven reactor design. Its power and water requirements are minimal. Once it reaches operating temperature, the system is self-sustaining if properly monitored. The system can gasify almost anything, though efficiency varies depending on what the inputs are.

In response to Mr. Skidmore, Mr. Schenk said most of the problems associated with gasifying municipal solid waste come from sorting and pulverizing the material prior to gasification. A system with a high enough system temperature could vaporize non-carbon material, though efficiency would be reduced.

3) General Announcements by attendees

Chair Mulloy briefly updated the Committee on the status of the Office of Environmental Initiatives (OEI). He noted that two new Committee members would be appointed soon.

Mr. Valliere reported that the City would be conducting a national search for a Director for the OEI. The Energy Management Coordinator job description has been finalized, and a job classification study will determine the salary. The Planning Specialist position will be recruited in the next month. The OEI is analyzing, evaluating and preparing recommendations to improve the City's impact on the environment.

Committee Member Sheaffer encouraged the Committee to visit the new bus maintenance facility, and the new light rail maintenance facility at 48th Street and Washington Boulevard. Both are green facilities. He reported that ASU is the first university in the country to have a Department of Sustainability, which is at SkySong in Scottsdale. A national hydrogen vehicle tour will stop in the Valley on August 22. Clean Cities next alternative transportation event will be held at Park Central in Phoenix. It will highlight the new light rail system, as well as a wide array of transportation alternatives.

Mr. McDonald discussed his efforts to get the City to support facilities for plug-in vehicles. The City should start providing facilities now, to be ready for the electric vehicles that automakers will introduce over the next few years. Chair Mulloy suggested agendaizing the issue for a future discussion. Committee Member Sheaffer suggested inviting an automaker to discuss the new technologies.

Adjournment

With no further business to discuss, the meeting adjourned at 9:11 a.m.

Respectfully submitted,

A/V-Tronics, Inc.