



The September 6th meeting will feature area EVs in a casual Show 'N Shine in the library's parking lot. ATC members and the public who are bringing EVs or other alternative forms of transportation to the Show 'N Shine are requested to park in the North parking lot (lot immediately adjacent to the building and closest to the street).

And don't miss the special October 11 meeting. It will be held at the Regional Transportation Commission's (RTC) headquarters. We will learn about their new trip planning software and about the new hybrid buses. I'm also told the RTC has been toying around with fuel cells so we will find out what they are up to in that field as well.

A flier and handbill are posted on our website: <<http://electricnevada.org>> (Please download a few to handout to friends and post at your favorite store or work break room!)

//\\\  
#####

### MEETING REVIEW -

Russ, from the Independent Power Corporation <<http://www.independentpowercorp.com/>>, discussed off grid photo-voltaic power generation and what kind of system it would take to charge EVs at the August meeting.

For more information:  
The Independent Power Corporation Showroom  
890 E. Patriot Blvd., Suite C  
Reno, Nevada 89511  
Toll-free: (877) 729-0228  
Phone: (775) 331-0228  
FAX: (775) 331-8474  
Email: info'AT'independentpowercorp.com

---

### EVENTS CALENDAR -

No events this month. :>(

---

### LISTSERVS - GET INVOLVED AND INFORMED VIA EMAIL! -

Besides the two club listservs (see the ATC website for more information) Bill Brinsmead alerted us to a national list. The Electric Vehicle Email Discussion is located at <<http://www.madkatz.com/ev/evlist.html>>.

---

### WATT'S UP? -  
by Bob Tregilus, ATC Chair

Talk about biofuels and renewable energy production, that's what.

A couple of weeks ago I attended the inaugural Nevada Clean Energy Summit at the Peppermill. Among the five to six hundred attendees I saw several of you who sacrificed your Saturday morning to learn about energy issues in Nevada. Actually, I think there were more ATC members in attendance than there were politicians!

Senator Harry Reid open the event reiterating his opposition to the construction of new coal-fired power plants in Nevada. "There are no clean coal plants, only cleaner ones," Reid said.

And although Nevada has, according to assemblywomen Sheila Leslie, the highest energy use per capita in the west (lay some blame on the casinos) we also have the most sunshine. I was surprised to learn that by the end of the year we will have the most watts per capita of installed photo voltaic (solar or PV panels) as well! That's pretty impressive, but when compared to "cloudy" Germany, who consumes over 50% of the world's production of PV panels, Nevada and the United States, at a measly 6% consumption of PV panels, are way behind in the move toward renewable energy development and installation.

Nevada is also number one in the nation in geothermal watts generated per capita.

The Summit's focus, however, was primarily on renewable energy production. Energy consumption, while briefly addressed by several of the speakers, received little mention and transportation issues almost none. That's unfortunate as combined transportation energy consumption accounts for over 40% of total energy use in the United States.\* One notable exception was the Phoenix Motorcar and Altairnano display during the lunch portion of the Summit. Dr. Alan Gotcher, CEO of Alairnano, also had the opportunity to address the Summit as well.

I think the imbalance of addressing production verses consumption speaks volumes to the wasteful nature of our society: That we can continue our lavish energy use and technology will continue to provide.

That brings me to the topic of this month's column - imbalances and equal treatment. Specifically, biofuels verses electricity as energy carriers to power our transportation needs.

Substances such as coal, oil, and natural gas are "energy sources" because they come out of the ground already "charged" with energy. Biofuels (with a couple of exceptions most notably peat) and batteries are "energy carriers" as both require charging. In the case of biofuels they have to be grown thus energy is expended to charge the product with useable energy. Likewise, batteries have to be charged from external sources of energy as well.

Efficiencies of an energy carrier are calculated based on energy loss to charge the product and make it useable. In the case of biofuels we expend energy to produce and transform biomass into fuel. And to charge our EV's batteries electricity must be generated by a variety of methods all requiring an investment of energy to produce and deliver electricity to our chargers. Given that it takes more energy to produce a useable energy carrier than can be ever be recovered we need to consider the efficiencies of the system to determine its efficacy. Finally, the First Law of Thermodynamics prohibits a net gain of energy in any process - energy will always be lost usually as heat. Thus, all claims of perpetual motion are bogus. Never, ever, can we gain energy at the same or greater rate than we are expending energy in a closed system.

In transportation, "well to tank" and "tank to wheel" efficiencies are the standard for determining the efficacy of a given fuel. Often, however, proponents of a given energy carrier or source will quote efficiencies from one or the other category - whichever best makes their case - and ignore the efficiencies of the entire system - "well to wheel."

The Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation (GREET) modeling program is the standard for calculating "well to wheel" efficiencies. "To fully evaluate energy and emission impacts of advanced vehicle technologies and new transportation fuels, the fuel cycle from wells to wheels and the vehicle cycle through

material recovery and vehicle disposal need to be considered." You can download the modeling software by following this link <<http://tinyurl.com/z64nk>>. The software (a spreadsheet) is free. It's also amazingly complex as well.

Originally, I was going to conclude this article by comparing efficacies of biofuels in ICE vehicles verses BEVs but I discovered that there is little agreement in the available data and the GREET modeling software is going to take a lot of time for me to figure out how to use it - if ever.

So, I decided to offer several articles comparing and contrasting biofuels in this edition of the ATC newsletter as well as two websites representing both sides of the debate.

Clearly, the United States - the world - needs a diverse energy portfolio going forward. No one energy solution is sustainable. With peak oil emanate, not to mention our desperate need to reduce our dependence on foreign oil and reduce greenhouse gas emissions, all solutions need to be considered equally. Their efficacies evaluated scientifically, not politically. And not by constituencies that will benefit economically, but by what's best for this and future generations.

The debate must be vigorous and balanced. Energy production and consumption, fuels and electric charge.

Hardly an objective survey, but a simple constrained Google search of the terms "electric vehicles" and "biofuel" returns two million verses five million hits consecutively. And a similar news search returns a greater imbalance of hits: for every one electric vehicle article there are seven biofuel articles.

A more balanced approach is needed. An energy summit needs to weigh both production and consumption equally. Likewise, legislators, the media, corporations, and the public need to shift their focus from biofuels and consider the electric option more vigorously.

I think the solution to our fuel and transportation needs involves robust investment and incentives in renewable energy generation and battery electric vehicles (BEV). Plug-in (biofuel) hybrids (PHEV) are already on the horizon and momentum is rapidly building toward consumer education and acceptance.

Given the average American commutes 33 miles per day and the average household owns 1.9 (call it two) vehicles the sustainable transportation solution for the vast majority of Americans is trading in or converting one vehicle to a BEV and replacing the other with a PHEV.\*\* Most miles would then be traveled operating in pure electric mode and on the weekend, when a trip to grandma's house is required, the PHEV's biofuel engine would kick in to take you the distance.

\* International Energy Association (IEA), Energy Consumption by sector 2005.

\*\* US Census Bureau.

---

### BIOFUEL WEBSITES OF THE MONTH -

This month - in the interest of fairness - ATC is featuring two websites of racially opposing views.

NATIONAL BIODIESEL BOARD (NBB)

<http://www.biodiesel.org/>

"The mission of the National Biodiesel Board is to advance the interests of its members by creating sustainable biodiesel industry growth. NBB serves as the industry's central coordinating entity and will be the single voice for its diverse membership base. Industry growth will be achieved through public affairs, communications, technical, and quality assurance programs. We are dedicated to inclusiveness and integrity."

BIOFUEL WATCH

<http://biofuelwatch.org.uk/>

"Biofuelwatch campaigns against the use of bioenergy from unsustainable sources, i.e. biofuels linked to accelerated climate change, deforestation, bio-diversity losses, human rights abuses, including the impoverishment and dispossession of local populations, water and soil degradation, loss of food sovereignty and food security."

---

### BIOFUELS IN THE NEWS -

AGROFUELS AND THE EXPANSION OF AGRIBUSINESS

"The wave of investment in agrofuels is restructuring agribusiness itself. New, powerful players are converging into the sector. Cosmetics corporations are selling biodiesel. Big oil is buying up plantations. Wall Street speculators are swinging deals with feudal sugar barons. All of this money circulating around the globe is reorganizing and intensifying transnational structures, linking the most brutal landowning class of the South with the most powerful corporations of the North."

Full story here:

<http://www.grain.org/seedling/?id=478>

-

VOLVO'S CO2-FREE/NEUTRAL TRUCKS

"In Sweden this past week, Volvo representatives proudly displayed the company's lineup of carbon-neutral trucks. The words Volvo uses to describe the line-up are "carbon free," but emissions still come out the tailpipe. The biomass components of the fuels make the net result carbon neutral, Volvo materials admit beneath the "carbon free" headline."

Full story here:

<http://tinyurl.com/34z2c7>

-

EU BIOFUEL POLICY IS A 'MISTAKE'

"The EU target of ensuring 10% of petrol and diesel comes from renewable sources by 2020 is not an effective way to curb carbon emissions, researchers say."

Full story here:

<http://news.bbc.co.uk/2/hi/science/nature/6949861.stm>

-

AGRICULTURE WILL PLAY A BIGGER ROLE ON ENVIRONMENT

"Over the last five years, most of us in agriculture have watched in amazement as our industry began a transformation into a new economic paradigm. Today, our farmers are not just feeding the world, they fuel it as well."

Full story here:

<http://tinyurl.com/3322y3>

-

#### WHAT IT COSTS US

"Many Americans think that coal went out with top hats and corsets. In fact, we burn more than a billion tons of coal each year in the United States -- about 20 pounds a day for every man, woman and child. We don't burn it in coal stoves, of course, but in big power plants that generate about half the electric power in the country."

[Editor's note: Coal is clearly not a biofuel, however, given EVer's often use power generated by coal-fired power plants to charge up our cars I thought this piece of interest. Please bare in mind that according to the California Air Resources Board (CARB), "EVs reduce pollutants by more than 90 percent when compared to the cleanest conventional gasoline-powered vehicles (even when factoring in the emissions from power plants generating the electricity to the charge the vehicle)." Source:

<<http://tinyurl.com/33ftza>>]

Full story here:

<http://tinyurl.com/2o2y3e>

-

#### DEBUNKING THE MYTH OF EVS AND SMOKESTACKS

"The purpose of this paper is to prove that EVs recharging from today's power plants are substantially cleaner than even the most efficient ULEVs. The myth that EVs are "elsewhere emission vehicles" will be put to the test with facts that clearly show EVs and power plants are cleaner, more efficient and more reliable then the infrastructure that supports ICE vehicles."

[Editor's note: This report is a bit dated. It was written in 1996 but the research stills holds up in 2007. Additionally, in 2006 a "new study for the US Department of Energy finds that off-peak electricity production and transmission capacity could power 84% of the country's 220 million vehicles if they were plug-in hybrid electric vehicles (PHEVs)." Source: <<http://tinyurl.com/34vhmy>>]

Full story here:

<http://www.evadc.org/pwrplnt.pdf>

---

#### ### BIOFUEL VIDEO CLIPS -

BIOFUELS -- THE "HOLY GRAIL" OF CLEAN ENERGY

<http://www.youtube.com/watch?v=xFVQPDUMPaU>

-

BIOFUELS & ETHANOL: THE REAL STORY

<http://www.youtube.com/watch?v=DeVT7jMYZlo>

-  
BIODIESEL FOR BETTER HEALTH  
<http://tinyurl.com/33b25m> or if link does not work click here  
<<http://www.biodiesel.org/multimedia/audiovideo/>>

-  
CLIMATE CAMP: 'BIOFUELS CRITIQUE'  
<http://www.youtube.com/watch?v=DQNvZUVnVUU>

-  
MOTOR WEEK FEATURE ON BIODIESEL  
<http://tinyurl.com/3a66g5> or if link does not work click here  
<<http://www.biodiesel.org/multimedia/audiovideo/>>

-  
DOING MORE HARM THAN GOOD  
<http://tinyurl.com/yv3bj7>

---  
#####

### ARTICLE CONTRIBUTIONS AND LEGAL STUFF -

CONTRIBUTIONS -  
Your article contributions and letters to the editor are welcome! Please submit original articles to Bob Tregilus: [lakeport104@yahoo.com](mailto:lakeport104@yahoo.com). In the interest of accuracy you are requested to provide citations for any facts stated in your article(s). This is a "plain text" eNewsletter and as such no photographs can be published. All contributions maybe edited for length and clarity. They may be messed up by mistake as well. Warning: dyslexic editor at work!

LEGAL -  
Content of this eNewsletter is licensed under Creative Commons Attribution 3.0 License. You may share, copy, distribute, adapt, and transmit this work so long as you retain the original attributions. Any adaptations or changes to the original content of this eNewsletter must be annotated with the new author's name and email contact.  
<<http://creativecommons.org/licenses/by/3.0/>>.

COMMENTS -  
Please call (775) 826-4514 or email your comments to Bob Tregilus at  
<[lakeport104@yahoo.com](mailto:lakeport104@yahoo.com)>.

TO UNSUBSCRIBE -  
If you are receiving this eNewsletter in error, or wish to be removed from this list, simply hit reply and ask!

#####