

Summary:

For the October 15th issue of NAATBatt's Advanced Battery Weekly, we highlight the ongoing sector activities.

The NAATBatt, U.S. and Asia Indices increased 3.7%, 4.4% and 3.0%, respectively. The S&P 500 Russell 2000 increased 2.5% and 2.1%, respectively.

NAATBatt 2010 Annual Meeting and Conference will be held at The Seelbach Hilton Hotel in Louisville, Kentucky on **December 8-10, 2010**. "**The Impact of PEV's on T&D Systems: Challenges and Solutions**" Conference will focus on the possible impacts of PEV recharging on local electric distribution and transmission systems and how distributed energy storage technology can help reduce the risk of disruptions. For additional information about the conference, click [here](#).

The NAATBatt 2010 Annual Meeting and Conference will feature a gala dinner that will culminate in the presentation of "golden spike" awards to General Motors Corporation and Nissan North America by Governor Steve Beshear of Kentucky. The awards will commemorate the launch of the first two mass-market PEV's in the United States and honor everyone who made the launch of mass market PEV's possible. The awards look back to the golden spike that joined the first transcontinental railroad in Promontory Summit, Utah in 1869 and launched the railroad age. On the evening of December 8, we will symbolically launch another age: the age of electric vehicles. See Executive Directors Notes below for more details about the awards. Please plan to attend this historic event. Click [here](#) to register.

Key Highlights:

- **Rubenius** is planning to build up to 1,000 megawatts of energy storage at a site in **Baja California, Mexico** at an estimated cost of \$4 billion. The **United Arab Emirates** based energy has purchased 140 hectares of land and will install **sodium sulfur (NaS)** batteries at a fully commissioned cost of over \$4 billion.
- **Carmanah Technologies** announced a strategic partnership with **Trojan Battery Company**. Carmanah will use Trojan's deep cycle batteries to provide energy storage for its **EverGENTM** portfolio of outdoor solar LED lights.
- **Mitsubishi Motors** is planning to launch a small business-use electric vehicle (EV) in Japan by the end of 2011, with a goal of selling 10,000 units. The company is planning to offer the EV for less than 2 million yen (\$32,000) including government subsidies.
- **ECotality** announced that **BP Products North America** will install **Blink DC Fast Chargers** at 45 BP and **ARCO** locations. Blink DC Fast Chargers will be available to the public at BP and ARCO locations as early as March of 2011.
- **General Motors** is coordinating the installation of 5,300 fast chargers in Michigan. Many of GM's chargers will run on solar power, via partnerships with two solar-panel companies; **Envision Solar International** and **SunLogics**.
- **ECotality** announced an agreement to provide Blink charging stations at select **Best Buy** U.S. stores. Charging stations will be installed at 12 select locations.

- **General Motors** could produce 15,000 **Chevrolet Volts** in 2011 and ramp up to 60,000 units the following year. The company also expects to receive a mileage certification for the Volt from the **U.S. Environmental Protection Agency** within a month.
- **Renault** and **E. Leclerc Centers** signed a letter of intent with the aim of developing a program to equip the centers' parking lots with charging infrastructure. 50 E.Leclerc centers will be equipped by 2011, 150 by the end of 2012 and nearly 500 by 2015.
- **CODA Automotive** and **Enterprise Rent-A-Car** announced a program to introduce up to 100 CODA EVs to car rental locations throughout 2011. Enterprise has more than 5,000 offices located within 15 miles of 90% of the U.S. population.
- **Contour Energy Systems** has acquired a breakthrough **carbon nanotube technology (CNT)** that can dramatically improve the power capability of lithium-ion (li-ion) batteries, through an exclusive technology licensing agreement with **Massachusetts Institute of Technology (MIT)**. Initial findings suggest CNT for battery electrodes can produce a 10x increase in the amount of power.
- **Rice University** and **Lockheed Martin** scientists have found that silicon can radically increase the capacity of li-ion batteries. Li-ion batteries hold about 300 milliamp hours per gram of carbon-based anode material. The treated silicon could theoretically store more than 10x that amount.
- Researchers at the **Department of Energy's (DoE) Pacific Northwest National Laboratory (PNNL)** have managed to increase the performance of sodium-nickel chloride (NaNiCl) batteries by flattening them. The redesign to a flat design from a typical cylindrical shape enables the battery to deliver 30% more power at lower temperatures, making them a viable alternative to li-ion batteries.
- **Active Power** received a 4th order for its **CleanSource UPS** (uninterruptible power supply) systems. Equipment will begin shipping in late 2010 with final shipment and installation to take place in early 2011.

A Few More Details:

Rubenius is planning to build up to 1,000 megawatts of energy storage at a site in Baja California, Mexico at an estimated cost of \$4 billion. The United Arab Emirates based energy has purchased 140 hectares of land and will install sodium sulfur (NaS) batteries at a fully commissioned cost of over \$4 billion. Rubenius is the recently created parent company of Amplex, originally incorporated in Denmark in 2001 (now Amplex-Emirates in U.A.E.).

Source: Sustainable Business

Carmanah Technologies announced a strategic partnership with Trojan Battery Company. Carmanah will use Trojan's deep cycle batteries to provide energy storage for its EverGENTM portfolio of outdoor solar LED lights. The use of a long-lasting battery in conjunction with solar LED technology should help reduce total cost of ownership and significantly lower a system's operating costs.

Source: Carmanah Technologies Corporation

Mitsubishi Motors is planning to launch a small business-use EV in Japan by the end of 2011, with a goal of selling 10,000 units. The company is planning to offer the EV for less than 2 million yen (\$32,000) including government subsidies. The EV will have a range of 100 km (62 miles) compared with the i-MiEV's 160 km (99 miles) that be enough to meet commercial need. Yamato Transport's parcel delivery vehicles drive about 30 km (19 miles) a day on average in Tokyo. Mitsubishi plans to produce 9,000 i-MiEV electric cars in the fiscal year ending on March 31 with production ramping to 40,000 units in the 2012/13 fiscal year.

Source: AsiaOne

ECOtality announced that BP Products North America will install ECOtality's Blink DC Fast Chargers at 45 BP and ARCO locations. Blink DC Fast Chargers will be available to the public at BP and ARCO locations as early as March of 2011. BP is expected to install DC Fast Chargers at select BP and ARCO locations in and around the major pilot markets of The EV Project. DC Fast Chargers will be available at select BP locations beginning in March 2011.

Source: ECOtality

General Motors is coordinating the installation of 5,300 fast chargers in Michigan. The company will install 345 fast chargers for Chevrolet Volt extended-range electric vehicles on company property by the end of 2011. Many of GM's chargers will run on solar power, via partnerships with two solar-panel companies; San Diego-based Envision Solar International and British Columbia's SunLogics. Consumers Energy has matched DTE Energy's pledge to cover up to \$2,500 of the charger and installation costs for 2,500 Michigan families. And the Lansing Board of Water and Light will provide another 25 charging stations to its customers.

Source: Detroit Free Press

ECOtality announced an agreement to provide Blink charging stations at select Best Buy U.S. stores. Charging stations will be installed at 12 select Best Buy stores in Tucson, Ariz., Phoenix, Ariz., Los Angeles, Calif., San Diego, Calif., and Seattle, Wash. Charging stations at these stores, within pilot markets of The EV Project, will be installed by March 2011.

Source: ECOtality

General Motors could produce 15,000 Chevrolet Volts in 2011 and ramp up to 60,000 units the following year. Production could be further increased once the battery capacity is in place. The company also expects to receive a mileage certification for the Volt from the U.S. Environmental Protection Agency within a month.

Source: Reuters

Renault and E. Leclerc Centers signed a letter of intent with the aim of developing a program to equip the centers' parking lots with charging infrastructure. 50 E.Leclerc centers will be equipped by 2011, 150 by the end of 2012 and nearly 500 by 2015. The company has 526 stores in France and 86 in the rest of Europe.

Source: Dow Jones

CODA Automotive and Enterprise Rent-A-Car announced a program to introduce up to 100 CODA EVs to car rental locations throughout 2011. Enterprise has more than 5,000 offices located within 15 miles of 90% of the U.S. population. The two companies also have an agreement to provide services for CODA owners. As part of that agreement, Enterprise will provide courtesy transportation vehicles to CODA customers during service and maintenance periods.

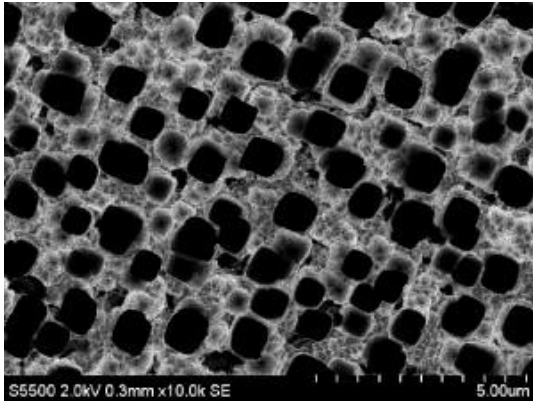
Source: CODA Automotive

Contour Energy Systems has acquired a breakthrough carbon nanotube technology that can dramatically improve the power capability of lithium-ion (li-ion) batteries, through an exclusive technology licensing agreement with Massachusetts Institute of Technology (MIT). Initial findings suggest carbon nanotubes for battery electrodes can produce a 10x increase in the amount of power that can be delivered from a given weight of material when compared to a conventional li-ion battery. The performance can be sustained across thousands of charge-discharge cycles.

Source: Kansas City Star

Rice University and Lockheed Martin scientists have found that silicon can radically increase the capacity of li-ion batteries. Li-ion batteries hold about 300 milliamp hours per gram of carbon-based anode material; the treated silicon could theoretically store more than 10x that amount. Silicon has the highest theoretical capacity of any material for storing lithium but after a couple of cycles of swelling and shrinking, it cracks. The organizations have found that putting micron-sized pores (as shown in **Exhibit 1**) into the surface of a silicon wafer gives the material sufficient room to expand. The pores, a micron wide and from 10 to 50 microns long, form when positive and negative charge is applied to the sides of a silicon wafer, which is then bathed in a hydrofluoric solvent.

Exhibit 1: Enhanced View of Microporous Structure

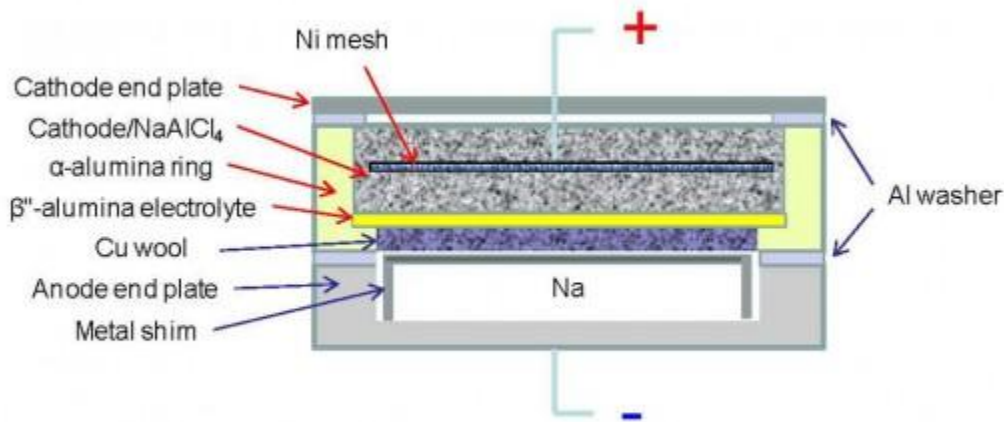


Source: IB Times

Researchers at the Department of Energy's (DoE) Pacific Northwest National Laboratory (PNNL) have managed to increase the performance of sodium-nickel chloride (NaNiCl) batteries by flattening them. The redesign to a flat design (as shown in **Exhibit 2**) from a typical cylindrical shape enables the battery to deliver 30% more power at lower temperatures, making them a viable alternative to li-ion batteries. The batteries are made from abundant materials such as alumina, sodium chloride and nickel, making them cheaper to produce than lithium-ion batteries. The 30% boost in performance could enable the NaNiCl to compete with li-ion in consumer devices. Furthermore, the batteries aren't prone to the thermal runaway.

Source: Gizmag

Exhibit 2: Schematic of Flat Battery Design



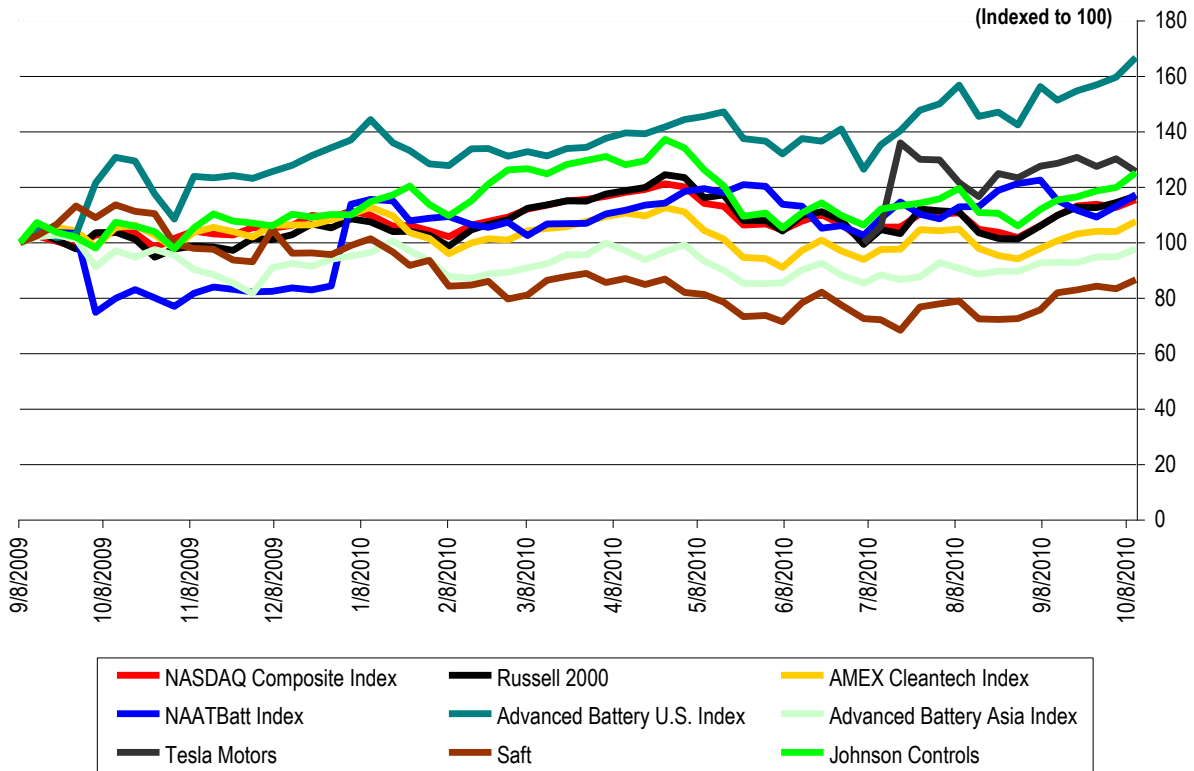
Source: PNNL

Active Power received a 4th order for its CleanSource UPS (uninterruptible power supply) systems. The 3rd order was received in late June 2010, totaling nine megawatts. The UPS equipment will provide power conditioning and protection for about 11 MW of critical IT load for an unnamed customer's mission critical datacenters located in the United States. Equipment will begin shipping in late 2010 with final shipment and installation to take place in early 2011.



Source: *ActivePower*

Exhibit 3: Indices Performance
(From September 8, 2009)

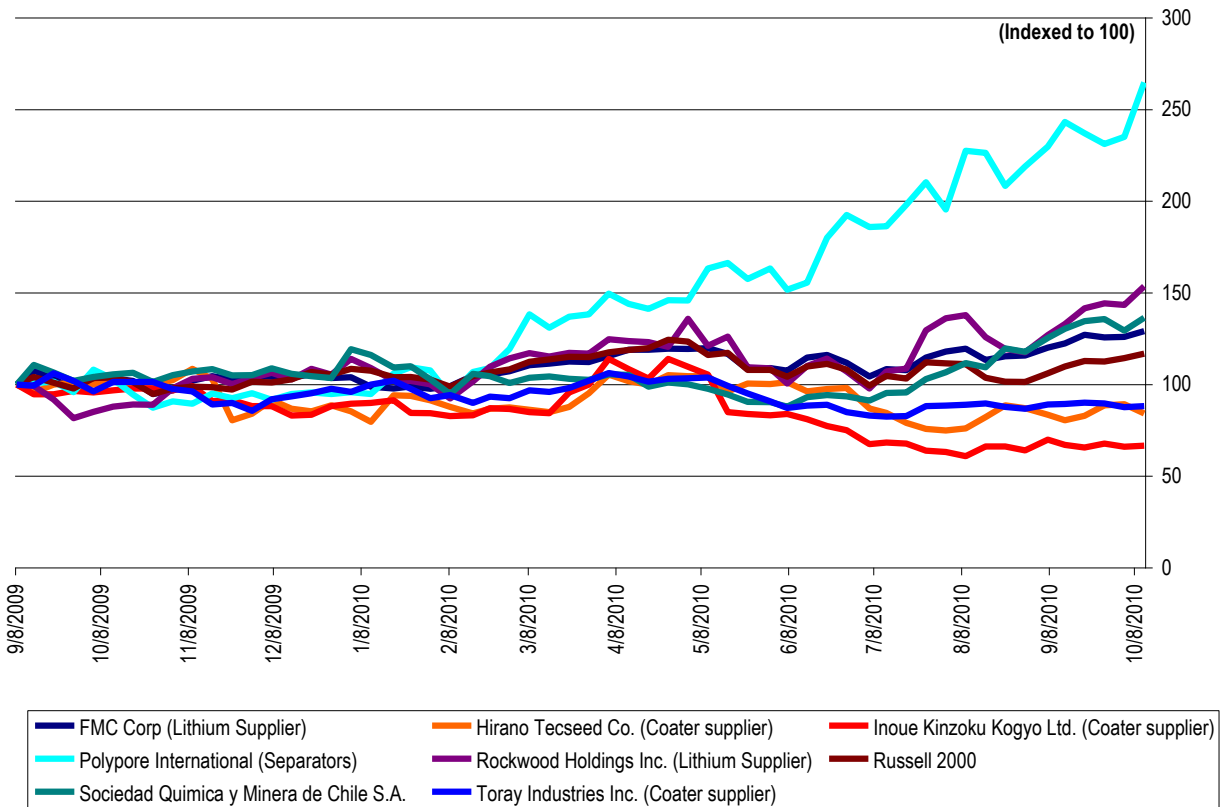


Index	Close on 10/11/2010	52-Wk High	% of 52-Wk High	Performance		
				LTM	YTD	Week
Dow	11,008.6	11,309.0	97.3%	11.6%	5.5%	2.4%
S&P 500	1,165.0	1,219.8	95.5%	8.7%	4.3%	2.5%
NASDAQ	2,402.3	2,535.3	94.8%	12.0%	4.7%	2.5%
Russell 2000	679.3	746.0	91.1%	10.4%	8.1%	0.0%
AMEX Cleantech Index	1,056.4	1,112.5	95.0%	2.5%	(1.0%)	3.6%

Source: Bloomberg and ThomsonOne

Note: The select NAATBatt Index is a market-value-weighted average and includes ALTI, BASF, COP, ENS and XIDE. The Advanced Battery U.S. Index is a market-value-weighted average and includes HEV, MGA, MXWL, UQM and VLNC. The Advanced Battery China Index is a market-value-weighted average and includes BYD, CBAK, GS Yuasa, LG Chem and Panasonic.

Exhibit 4: Supplier Performance
(From September 8, 2009)



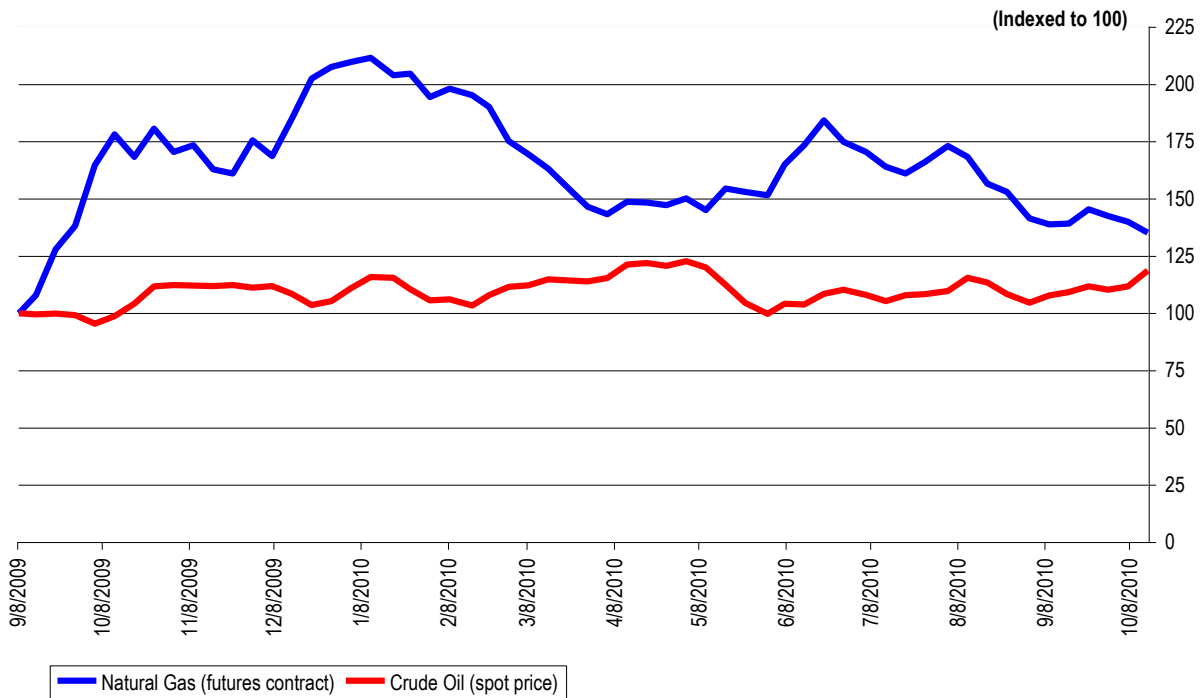
Source: Bloomberg

Exhibit 5: Commodity Prices

Commodity	Price on 10/11/2010	Price on 10/4/2010	Price on 9/13/2010	1 Week Change	1 Month Change
LME Nickel (Cash, \$ per tonne)	24,465	24,255	23,070	0.9%	6.0%
LME Lead (cash, \$ per tonne)	2,270	2,275	2,186	(0.2%)	3.9%

Source: LME

Exhibit 6: Natural Gas and Crude Oil
(From September 8, 2009)



Source: EIA

Executive Director's Notes



**GOLDEN SPIKE AWARD TO
HONOR THE LAUNCH OF THE ELECTRIC VEHICLE AGE**

On May 10, 1869, a crowd gathered in Promontory Summit, Utah, to witness one of the great events of the Nineteenth Century: the driving of the last spike of the first transcontinental railroad in the United States. Although railroads had existed in various forms for almost one hundred years before, the driving of the last spike in Promontory Summit marked the beginning of a new age. Those present knew this to be true. The event was marked by celebrations around the country and by the presentation of golden spikes to the two railroads completing the project. One of those spikes can be seen today at the Stanford University Museum.

On December 8, 2010, there will be another gathering to mark the beginning of a new age: the age of the electric automobile. That gathering will take place in Louisville where Governor Steve Beshear of Kentucky will present golden spikes to General Motors Corporation and Nissan North America honoring their near simultaneous launch of the first mass market plug-in electric vehicles in the United States: the Chevy Volt and the Nissan Leaf. Louisville, Kentucky, lying half way between GM's headquarters in Detroit and Nissan's North American headquarters in Tennessee, will serve as the site of the awards. NAATBatt is honored to host this event as part of its 2010 Annual Meeting and Conference.

Although the golden spike presentations will honor the immediate achievements of General Motors and Nissan, they will in a fuller sense honor the vision and hard work of hundreds of scientists, engineers, business people and government officials around the country who have made the launch of mass market electric vehicles possible. Make no mistake, these vehicles will in time change the world, and change it for the better. It is fitting and proper that we should mark their introduction and honor those who have worked so hard to make it possible.

Please join us in Louisville this December for what will be a historic event. Future generations look back and ask when the electric vehicle age started. We have the opportunity, and the responsibility, to give them an answer. Join us in Louisville, the 21st Century Promontory Summit, on December 8, to mark the launch of the electric vehicle age. Click [here](#) to register.



James J. Greenberger
Executive Director

October 15, 2010

NAATBatt Board Approves New Member Incentives 2011 Membership Drive Underway

2011 Membership Applications and Dues Structure

The NAATBatt Board of Directors has authorized NAATBatt to begin accepting applications for membership for the 2011 calendar year. Membership dues for 2011 will remain at \$10,000 for Corporate Members, \$10,000 for OEM Members, \$10,000 for Utility Members, \$5,000 for Associate Members, \$1,000 for Individual Members, and \$500 for Non-Profit/Government Members. Payment of 2011 dues in 2010 will entitle new members to all benefits of membership for the balance of 2010 as well as 2011, including free admission to NAATBatt Webinar programs, discounted admission to the NAATBatt Annual Meeting and Conference in Louisville, Kentucky on December 8-10, 2010, preferred locations and discounts on display space at the Annual Meeting and Conference, discounts at other industry conferences for which NAATBatt is a supporting organization, and recognition in the industry as a member of NAATBatt. Please click on <http://naatbatt.org/membership-inquiry/> and indicate that you are interested in a 2011 membership.

Discount Offered on 2010 Membership

The NAATBatt Board of Directors has authorized the institution of a 70% discount on Corporate, OEM, Utility and Associate 2010 Memberships for new members for the balance of the 2010 calendar year. Purchasing a discounted 2010 membership in NAATBatt is a great way for companies interested in NAATBatt to try out a membership and determine whether it brings value to their organizations. A membership for 2010 will entitle companies to all benefits of membership for the balance of this calendar year, including free admission to NAATBatt Webinar programs, discounted admission to the NAATBatt Annual Meeting and Conference in Louisville, Kentucky on December 8-10, 2010, preferred locations and discounts on display space at the 2010 Annual Meeting and Conference, discounts at other industry conferences for which NAATBatt is a supporting organization during 2010, and recognition in the industry as a member of NAATBatt. Please click on <http://naatbatt.org/membership-inquiry/> and indicate that you are interested in a discounted 2010 membership.

Why Join NAATBatt?

NAATBatt's mission is to grow the market for advanced electrochemical energy storage technology in North America. NAATBatt provides regular educational programming on topics of interest to the advanced battery community, a weekly newsletter chronicling developments in the North American advanced battery market, networking opportunities for industry participants and their customers, and public policy initiatives, such as the recent NAATBatt-sponsored meeting with Chairman Jon Wellinghoff of FERC and production of written comments to FERC in support of distributed energy storage technology.

Most importantly, NAATBatt is a not-for-profit trade association qualified under Section 501(c)(6) of the Internal Revenue Code that is working for the benefit of the entire industry. **Every dollar spent on NAATBatt memberships and programs goes to recouping program costs and to supporting**

activities intended to benefit the entire advanced battery industry. At a time when it seems that the only people making money on advanced lithium-ion technology are professional conference organizers, the advanced battery industry should take control of its own market and its own future. NAATBatt exists to market for the industry, not to the industry. But we need your support to do it. Please join soon.

North American Industry Announcements and Calendar

**REGISTER
NOW!**

NAATBatt Annual Meeting and Conference on PEV Impacts on T&D Systems: The 2010 NAATBatt Annual Meeting and Conference will be held on **December 8-10, 2010** at The Seelbach Hilton Hotel in Louisville, Kentucky. The annual meeting will kick off a two-day conference entitled: “**The Impact of PEV’S on T&D Systems: Challenges and Solutions**”. The program will discuss the possible adverse consequences that large scale recharging of mass market electric vehicles may have on portions of the power grid as well as the possible legal and regulatory consequences that may arise from system failures. The program will highlight the important role that distributed energy storage systems can play in stabilizing local distribution systems and accommodating large scale PEV deployment. In keeping with NAATBatt’s mission as a not-for-profit organization, we have intentionally set registration and exhibition prices below those of competing, for-profit conferences. Member companies are invited to exhibit their stationary storage technology and will be entitled to discounted registration and exhibit space. Register now to take advantage of Early Bird rates and discounted hotel rooms. Information about and registration for the Annual Meeting and Conference can be found at: <http://naatbatt.org/2010annualmeeting/>. Please note that NAATBatt’s new membership drive, discussed in the preceding section of this newsletter, makes NAATBatt membership more affordable than ever. Click on <http://naatbatt.org/membership-inquiry/> to apply for membership.

- **Battery Power 2010 Conference:** Battery Power 2010, an international conference highlighting the latest developments and technologies in the battery industry, will be held **October 19-20** in Dallas, Texas. The conference, which is in its eighth year, will feature more than 35 presentations on portable, stationary and automotive battery technology, as well as battery manufacturing, materials and research & development. NAATBatt is a supporting organization of the conference and NAATBatt members in good standing are entitled to register for the conference at the discounted rate of \$495.00. Please contact jgreenberger@naatbatt.org for information about how to receive this discount. Information about the conference and registration for it may be found at: http://www.batterypoweronline.com/bppt-conf10/bp10_index.php.
- **U.S. National Electric Vehicles Safety Standards Summit:** On **October 21-22**, in Detroit, Michigan, the National Fire Protection Association (NFPA) will be holding a safety summit along with co-sponsor SAE International in order to ensure standards on electric cars. The summit will focus on how to implement such standards on a rapidly growing industry, in which technology is swiftly improving. To find out more about the summit visit http://www.nfpa.org/newsReleaseDetails.asp?categoryid=488&itemid=46997&cookie_test=1
- **Rare Earth Metals Summit III:** Infocast’s Rare Earth Metals Summit III will be held in Washington, D.C. on **October 25-27**, 2010. The conference will examine the supply and value chains for rare and strategic metals, including lithium. NAATBatt is a supporting organization of the conference and NAATBatt members will be entitled to a 10% discount on registration. The conference Web site can be found at: <http://www.infocastinc.com/index.php/conference/metals10>.

- **Annual DOE Program Update Conference – Energy Storage R&D Programs:** Sandia National Laboratory's U.S. DOE Energy Storage Systems Research Program (ESS) will be held on **November 2-4**, in Washington D.C. The program will review the latest DOE sponsored research in advanced battery technology, power conditioning and others topics relating to advanced energy storage. Registration for the conference can be found here: <http://www.sandia.gov/ess/About/newsevents.html#conf>
- **Battery Safety 2010:** Knowledge Foundation will hold a conference focusing on advancements in systems design, integration and testing for lithium-ion battery safety and reliability in Boston, MA on **November 3**, 2010. Additional information about the conference can be found at: <http://www.knowledgefoundation.com>
- **Battery Lithium Mobile Power 2010:** Knowledge Foundation will hold a conference focusing on new lithium-ion battery chemistries, novel electrode and electrolyte materials, and system integration for a vast array of mobile and portable applications in Boston, MA on **November 4-5**, 2010 in conjunction with the Battery Safety 2010 Conference referenced above. Additional information about the conference can be found at: <http://www.knowledgefoundation.com>
- **Future of Electric Vehicles Conference:** The Future of Electric Vehicles Conference will be held in San Jose, California on **December 7-8**, 2010. The conference will have representatives for all electric vehicle types, components, and uses. The conference will permit attendees to learn more about electric vehicles in each and every form. Information and registration for the conference can be found on the website at: <http://www.idtechex.com/electric-vehicles-usa-10/>
- **Advanced Automotive Batteries Conference & Symposium 2011:** The Advanced Automotive Batteries 2011 Conference (AABC) will be held on **January 24-28 2011**, in Pasadena, California. This is the next domestic program in the series of conferences on automotive batteries sponsored by Dr. Menahem Anderman and Total Battery Consulting. The conference Web site can be found at: <http://www.advancedautobat.com/automotive-battery-conference-2011/index.html>.
- **Shmuel DE-Leon Energy, Ltd** an industry knowledge base company has developed a new power sources DataBase including 28,000 records of industry vendors, cells datasheets with a full parametric searching capabilities. The product provides industry users and companies with a knowledge tool to find the power sources resources and vendors for their EV needs. See: www.batteriesdatabase.com, or contact: shmueld33@gmail.com.
- **Energy Overviews** a media company which publishes weekly newsletters covering several renewable energy industry verticals, including Clean Transportation, is offering NAATBatt members as a group the opportunity to subscribe to Energy Overviews' newsletters, databases and other services for the price of \$250 per year, a discount from the standard subscription rate of \$587 per year, *provided that* at least 20 NAATBatt member companies accept this offer. See <http://www.epoverviews.com/>. If your company is interested in a subscription, please contact Jim Greenberger at jgreenberger@naatbatt.org.



- **NAATBatt Membership Information.** NAATBatt is taking applications for membership from well qualified industry participants and supporters. Membership in NAATBatt is a great way to keep abreast of developments in advanced technology batteries and to support the growth of a market for products that could change the world. Your support for NAATBatt programs, newsletters, committees and the upcoming roadmap project is essential to the success of our organization and our industry. To inquire about membership, please complete the following inquiry form: <http://naatbatt.org/membership-inquiry/>. NAATBatt will respond with additional information about membership.



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