

Summary:

For the November 12th issue of NAATBatt's Advanced Battery Weekly, we highlight the ongoing sector activities.

The NAATBatt, U.S. and Asia Indices increased 4.0%, 9.3% and 4.6%, respectively. The S&P 500 and Russell 2000 increased 3.3% and 5.5%, respectively.

Executive Director James Greenberger writes about how the advanced battery industry may need to change its public messaging in light of the recent election results. Mr. Greenberger's commentary, "**Focus on Two Words: Energy Security**", can be read in the Executive Director's Notes later in this newsletter.

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 and to register, click on: <http://naatbatt.org/2010annualmeeting/>

Key Highlights:

- **General Electric** is planning to purchase 25,000 electric vehicles (EVs) by 2015. The company is purchasing 12,000 vehicles from **General Motors** including the 2011 **Chevrolet Volt** which is powered by lithium-ion (li-ion) batteries from **Compact Power**.
- The new li-ion powered double decker bus from **Wrightbus** and **Transport for London** was unveiled in **London**. The rear wheels are driven by an electric motor, which is powered by a battery system from **Valence Technology** and a diesel engine/generator.
- The joint venture (JV) established between **A123 Systems** and **SAIC Motor (Shanghai Automotive Industry Corporation)** has been selected to develop battery packs for a new model 2012 EV to be manufactured in China. The five-passenger sedan is part of the **Roewe** brand and will have an approximately 20-kilowatt-hour (KWh) battery pack and a 100-mile range.
- **SB LiMotive** (a JV between **Samsung SDI** and **Bosch**) opened its first EV battery plant in **Ulsan, South Gyeongsang**. **BMW** has stated intentions to purchase SB LiMotive battery cells for its electric **Megacity** vehicle. SB LiMotive also won an order from **Chrysler** to provide li-ion battery packs.
- **Volkswagen (VW)** is planning to sell 10,000 EVs from 2014 to 2018 in China. The company expects to produce an electric model at local ventures with **SAIC Motor** and **FAW Group** as early as 2013.
- **Siemens AG** will be supplying EV charging posts and other infrastructure to an undisclosed Chinese city for installation over the next three months. The company has also been negotiating with Chinese utilities and cities -- including **Shanghai**, **Guangzhou** and **Chongqing** to provide a charging infrastructure.
- **New York City Mayor Michael Bloomberg** has urged delegates at the **C40** conference in **Hong Kong** to promote the use of electric taxis. 25 member city governments represented in the coalition have oversight of taxi fleets controlling more than 1 million cabs.

- The first charging station for EVs was put into use in **Guangzhou**, capital of south China's **Guangdong Province** to promote the idea of Green Games before the opening ceremony of the **Asian Games**. The station is between **Nanshagang Highway** and **Beijing-Zhuahai Highway** in the Asian Games City.
- **Eclimo Sdn Bhd** will begin offer the **Penan** electric scooter that uses a rechargeable li-ion battery. The scooter can travel up to 120 kilometers (about 75 miles) at an average speed of 50 km/hr (or over 30 miles per hour) when fully charged.
- **ZBB Energy** has received a purchase order and executed a letter of intent with **Sunflower Wind** for the purchase of multiple **ZESS POWR™ PECC (Power & Energy Control Center)** systems. The Zinc Bromide energy storage technology provides Sunflower with the ability to integrate multiple power inputs with their 100 KW (Model SW100B) wind turbine to provide backup power and load balancing in a variety of diverse applications.
- **Northeast Ohio's** first public charging station for EVs went into service this week. **Recharge Power** is providing the units and is expecting to install up to 30 charging stations around **Cleveland**.

A Few More Details:

General Electric is planning to purchase 25,000 electric vehicles (EVs) by 2015. The company is purchasing 12,000 vehicles from General Motors including the 2011 Chevrolet Volt which is powered by lithium-ion (li-ion) batteries from Compact Power. EVs will comprise at least 50% of GE's 30,000 fleet, as well as leased vehicles from its GE Capital unit.

Source: Bloomberg

The all-new lithium-ion (li-ion) powered double decker bus (as shown in **Exhibit 1**) from Wrightbus and Transport for London was unveiled in London. The rear wheels are driven by an electric motor, which is powered by both a battery system from Valence Technology and a diesel engine/generator. The first bus should be on the streets of London by the end of 2011 with another four to follow in 1H12.

Exhibit 1: Electric Double Decker To Be On The Road in 2H11



Source: Autocar

The joint venture (JV) established between A123 Systems and SAIC Motor (Shanghai Automotive Industry Corporation) has been selected to develop battery packs for a new model 2012 EV to be manufactured in China. A123 will supply the cells with SAIC building the battery pack. The five-passenger sedan is part of the Roewe brand and will have an approximately 20-kilowatt-hour (KWh) battery pack and a 100-mile range.

Source: A123 Systems

SB LiMotive (a JV between Samsung SDI and Bosch) opened its first EV battery plant in Ulsan, South Gyeongsang. By 2013, the JV will have invested ~\$500 million in SB LiMotive. BMW has stated intentions to purchase SB LiMotive battery cells for its electric Megacity vehicle. SB LiMotive also won an order from Chrysler to provide li-ion battery packs. The plant is expected to supply enough batteries for 180,000 EVs annually by 2015.

Source: JoongAng Daily

Volkswagen (VW) is planning to sell 10,000 EVs from 2014 to 2018 in China. The company expects to produce an electric model at local ventures with SAIC Motor and FAW Group as early as 2013. VW is also considering a battery-powered model specifically designed for China in 2018

Source: Detroit Free Press

Siemens AG will be supplying EV charging posts and other infrastructure to an undisclosed Chinese city for installation over the next three months. The company has also been negotiating with Chinese utilities and cities -- including Shanghai, Guangzhou and Chongqing to provide a charging infrastructure. Siemens has already signed a contract to provide IT and service support for London's planned e-vehicle charging network through 2013.

Source: *Montreal Gazette*

New York City Mayor Michael Bloomberg has urged delegates at the C40 conference in Hong Kong to promote the use of electric taxis. C40 is a coalition of 40 cities with a collective population that accounts for about 1 in 12 people in the world. The 19 of the C40 cities where statistics were available are home to more than 20 million cars and 25 member city governments represented in the coalition have oversight of taxi fleets controlling more than 1 million cabs.

Source: *Associated Press*

The first charging station for EVs was put into use in Guangzhou, capital of south China's Guangdong Province to promote the idea of Green Games before the opening ceremony of the Asian Games. The station is equipped with one direct-current charger and two alternating-current chargers. It can provide 24-hour-charging for cars, buses and other large vehicles. An electric car takes 18 minutes to charge while a medium-sized vehicle takes at least 30 minutes and a large vehicle takes at least 45 minutes. The station is between Nanshagang Highway and Beijing-Zhuahai Highway in the Asian Games City.

Source: *Xinhua*

Eclimo Sdn Bhd will begin offer the Penan electric scooter (as shown in **Exhibit 2**) that uses a rechargeable li-ion battery. The Penan can travel up to 120 kilometers (about 75 miles) at an average speed of 50 km/hr (or over 30 miles per hour) when fully charged. The battery can be recharged in 3.5 hours and has a cycle life of 100,000 km (over 62,000 miles).

Exhibit 2: The Electric Penan



Source: *The Malaysia Star*

ZBB Energy has received a purchase order and executed a letter of intent with Sunflower Wind, for the purchase of multiple ZESS POWR™ PECC (Power & Energy Control Center) systems. The Zinc Bromide energy storage technology provides Sunflower with the ability to integrate multiple power inputs with their 100 KW (Model SW100B) wind turbine to provide backup power and load balancing in a variety of diverse applications. The ZESS POWR™ PECC is a hybrid power system that converts any combination of wind, solar, hydro or other generating sources to independently optimize the control of each generating source while providing a 'steady-state' power output to electrical loads or directly to the grid.

Source: ZBB Energy

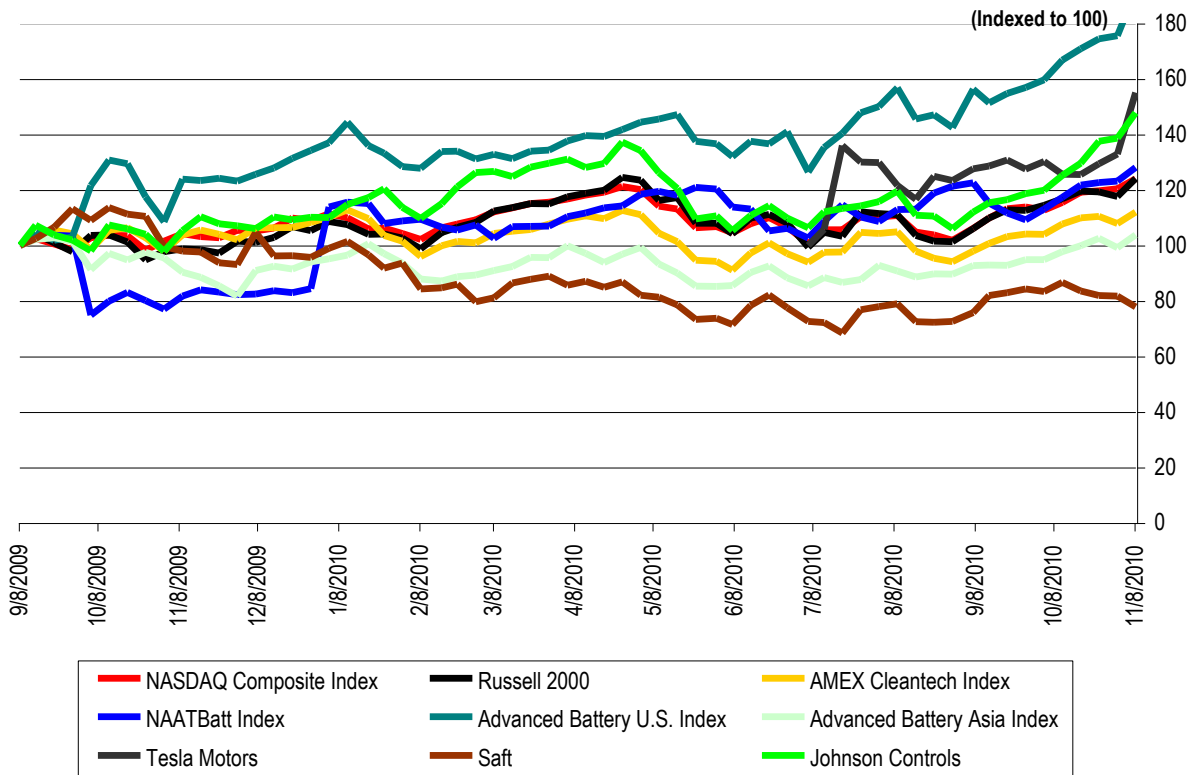
Northeast Ohio's first public charging station for EVs went into service this week. The station resides in the parking lot of the Baker Electric Building. By the end of the year, dozens could be open, mostly in the University Circle area. Recharge Power is providing the units (such as that shown in **Exhibit 3**) and is expecting to install up to 30 charging stations around Cleveland. The company indicated charging station owners will be able to set their own rates with one likely scenario costing users \$2 for the 1st hour and \$0.75 for each additional hour.

Exhibit 3: Recharge Power Charging Station



Source: The Plain Dealer

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

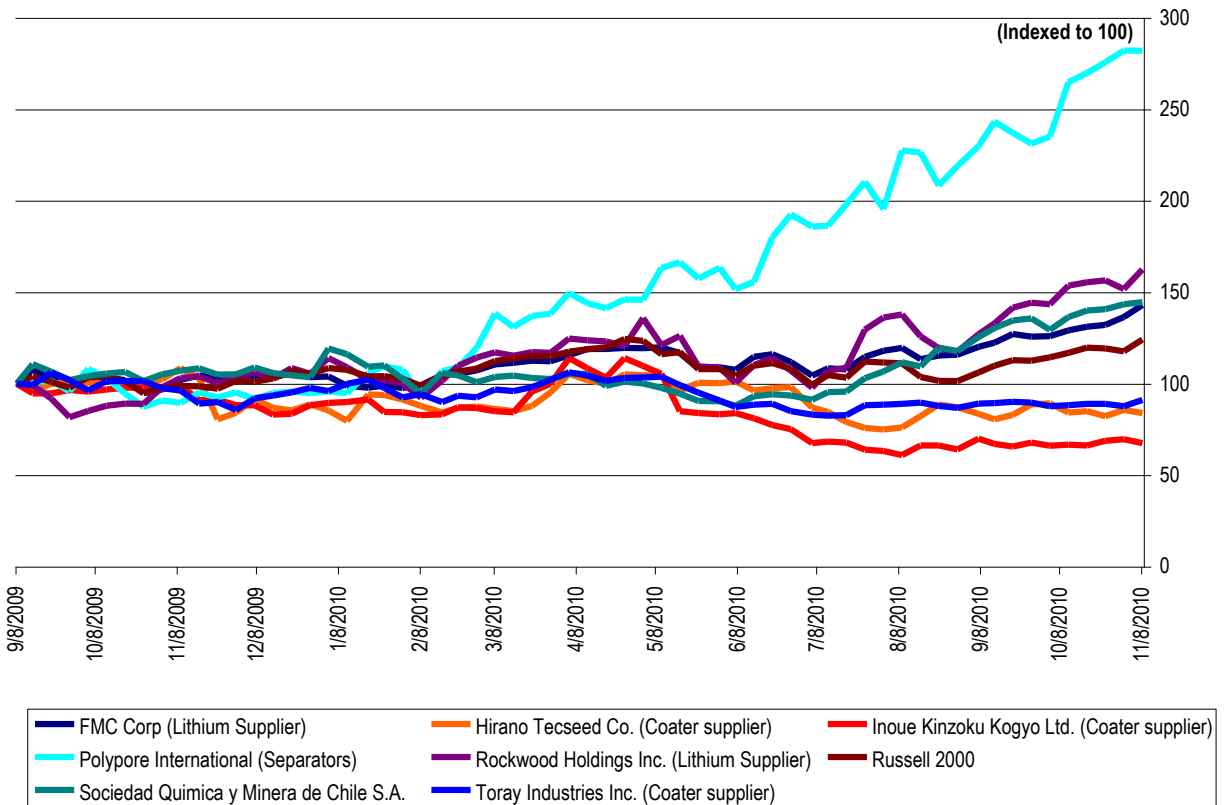


| Index | Close on 11/8/2010 | 52-Wk High | % of 52-Wk High | Performance | | |
|----------------------|--------------------|------------|-----------------|-------------|-------|------|
| | | | | LTM | YTD | Week |
| Dow | 11,406.8 | 11,505.8 | 99.1% | 13.8% | 9.4% | 2.5% |
| S&P 500 | 1,223.3 | 1,227.1 | 99.7% | 14.1% | 9.6% | 3.3% |
| NASDAQ | 2,580.1 | 2,582.2 | 99.9% | 21.2% | 12.4% | 3.0% |
| Russell 2000 | 736.8 | 746.0 | 98.8% | 26.2% | 17.3% | 5.5% |
| AMEX Cleantech Index | 1,098.8 | 1,112.5 | 98.8% | 9.6% | 3.0% | 3.8% |

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 5: Supplier Performance
(From September 8, 2009)



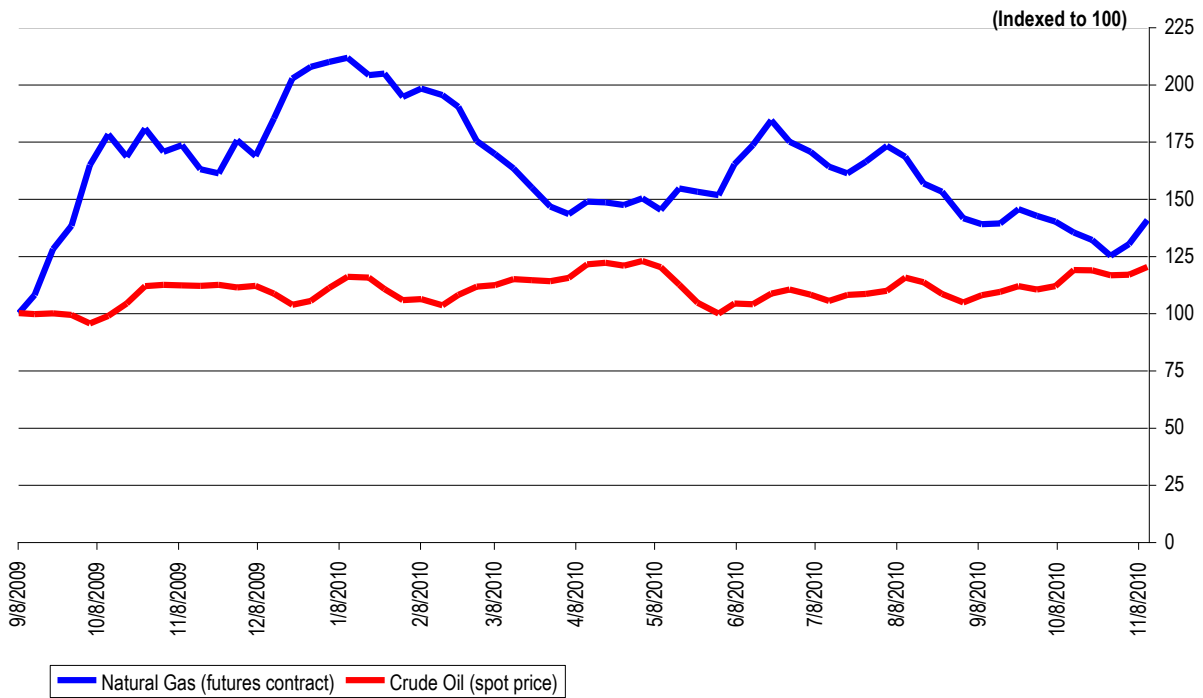
Source: Bloomberg

Exhibit 6: Commodity Prices

| Commodity | Price on 11/8/2010 | Price on 11/1/2010 | Price on 10/8/2010 | 1 Week Change | 1 Month Change |
|---------------------------------|--------------------|--------------------|--------------------|---------------|----------------|
| LME Nickel (Cash, \$ per tonne) | 24,200 | 23,255 | 23,700 | 4.1% | 2.1% |
| LME Lead (cash, \$ per tonne) | 2,484 | 2,472 | 2,197 | 0.5% | 13.0% |

Source: LME

Exhibit 7: Natural Gas and Crude Oil
(From September 8, 2009)



Source: EIA

Executive Director's Notes



FOCUS ON TWO WORDS: ENERGY SECURITY

As I discussed last week, the results of the mid-term elections marked a major power shift in Congress, though not one likely in itself to affect the prospects of the advanced battery industry. What the elections will impact, however, is how the industry needs to talk to the public and to the political leadership about the importance of advanced batteries.

Advanced battery technology can claim three major social benefits. First, energy storage is a way to balance variable renewable energy and integrate more of it onto the grid. Renewable energy is good because it helps reduce greenhouse gas emissions. Second, advanced batteries provide a form of energy that can substitute for petroleum-based fuels. Petroleum is bad, not in itself, but because its sources of supply are becoming constricted and more susceptible to catastrophic disruption by any number of natural and man-made events. Third and finally, and somewhat related to the second benefit, energy storage technology is destined to become an ever-more important technology in industrialized societies and an increasing source of jobs and economic opportunity.

For the past few years, many companies in the energy storage industry have led their marketing pitches by talking about the important role that energy storage can play in promoting renewable energy integration. This is and always has been a valid argument. Moreover it has provided for convenient alliances with environmental advocates, renewable energy developers and other potential customers.

The lesson of the last election, however, is that this lead story needs to change. The debate about climate change has become more controversial and initiatives to limit greenhouse gas emissions across the country (with the possibly significant exception of California) have near-term prospects that are questionable at best. Spending too much time talking about renewables integration may be barking up the wrong tree.

Energy security, however, is a completely different matter. The ability of stored electrochemical energy to displace petroleum in the national energy infrastructure is a critical message that the advanced battery industry needs to deliver and that will have resonance on both sides of the Congressional aisle. It is important to remember, and where appropriate to emphasize, that the energy security benefits of advanced batteries have absolutely nothing to do with greenhouse gas emissions or the debate over climate change.

As an industry, we must continue to emphasize that different advanced battery applications are interrelated and interdependent. Stationary, grid-connected battery applications can and will play a

critical role in reducing the cost of the batteries used to power plug-in electric vehicles. Promoting the use of grid-connected applications by utilities can provide a secondary market for retired automobile batteries, increase the production volumes (and reduce the per unit fixed costs) of battery plants, and help advance the science of electrochemical energy storage generally. This is a critical message that the industry needs to deliver to policy makers—and a central theme of NAATBatt's upcoming conference in Louisville.

Because of the cost of energy storage is likely to remain higher than the nominal cost of petroleum for the foreseeable future (assuming, of course, that there are no petroleum supply disruptions), the advanced battery industry will require subsidies in some form to continue its growth and to continue making advances in energy storage technology. Since subsidies come from government, getting the political message right is an inseparable part of any marketing strategy.

The case for advanced battery technology needs to be made consistently and persuasively to government leadership. Our industry must deliver that message not just to leaders in Washington, but to leaders at the state, local and PUC levels as well. The advanced battery industry cannot afford to get its marketing message wrong. And a central part of that message over the next few years needs to be: Focus on energy security.



James J. Greenberger
Executive Director

November 12, 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.

- ***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>.
- ***Advanced The 28th International Battery Seminar & Exhibit:*** Power Source’s annual International Battery Seminar & Exhibit will be held on **March 14-17, 2010**, at the Broward County Convention Center in Fort Lauderdale, Florida. A link to the conference Web site can be found at: <https://powersources.net/florida/28th.html>.
- ***Plug-In Electric Vehicle Infrastructure USA 2011:*** The Plug-In Electric Vehicle Infrastructure USA 2011 conference will examine five key areas of interest to those working with PEV’s and their supporting infrastructure. The conference will be held **March 31-April 1, 2011**, at the Hilton Mission Bay in San Diego California. The conference Web site is: <http://www.evupdate.com/electricvehicleusa/index.shtml>.

- **The Battcon™ International Stationary Battery Conference:** The Battcon™ International Stationary Battery Conference is a three day, noncommercial, technical event for storage battery users from a broad range of industries. The conference will be held from **May 16 to 18, 2011** at the Swan and Dolphin Resort, Orlando, Florida. The conference Web site is: <http://www.battcon.com/>
- **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 , www.sdle.co.il, 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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