

Summary:

For the October 22nd issue of NAATBatt's Advanced Battery Weekly, we highlight the ongoing sector activities.

The NAATBatt, U.S. and Asia Indices increased 3.8%, 2.5% and 2.2%, respectively. The S&P 500 and Russell 2000 also increased 1.7% and 2.4%, respectively.

Executive Director James Greenberger makes the case that the key to the success of electric vehicles is finding secondary commercial uses for advanced batteries. See "Focus on Secondary Use" in the Executive Director's Notes section of this newsletter below.

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:

- **Hitachi** and **Johnson Controls** announced the signing of a memorandum of understanding (MOU) to collaborate on advanced energy storage. Hitachi has mass produced lithium-ion (li-ion) automotive batteries for commercial hybrid buses and trucks and other applications.
- A truck produced by **Electronic Vehicles International** in **Stockton** is being used and tested by **UPS** in **San Francisco** as part of a pilot program. The li-ion battery is provided by **Valence Technology**.
- The **Car Charging Group** announced plans to install electric vehicle (EV) charging stations at **Mall of America** in **Bloomington, Minnesota**. The mall has over 13,000 parking spaces in its lots.
- **Siemens Energy** launched a new product line of EV charging stations. The EV charging stations will offer **Coulomb Technologies' ChargePoint® Network**.
- **Portugal** is on track to open the world's first nationwide EV charging network early next year. The country is planning to replace 10% of all vehicles with EVs by 2020.
- **Sanyo Electric** is planning to slash the cost of manufacturing lithium-ion (li-ion) batteries used in cars to less than 50% of the current industry average in 5 years. The plan is to lower the cost to less than 50 yen (or \$0.61) per watt hour in 2015, compared with the current industry average of about 100 yen (or \$1.23).
- **EnergyOne Technologies** signed a Technology License agreement with **VS Technology**, for the manufacturing of their **Nickel Zinc** batteries, Battery Management Systems and Composite Modules to be utilized in various energy storage applications. Under the agreement, VS Technology will provide EnergyOne with energy storage resources for a term of 20 years.
- The state **Department of Business, Economic Development and Tourism** stated energy storage projects in **Hawaii** and **Maui** counties are due to receive \$2.1 million in federal stimulus funds. The funds from the **Department of Energy** are intended to expand renewable energy use.

- **Transport Canada** is joining with **Mitsubishi Canada** to test two **i-MIEVs** (innovative electric vehicles) in government facilities and in real-world conditions. Mitsubishi already has test agreements with **Hydro-Quebec**, the city of **Boucherville**, **BC Hydro** and the city of **Vancouver**.
- The **California Energy Commission** recently announced **EV Connect** and the **Los Angeles County Metropolitan Transportation Authority (Metro)** will be conducting a pilot program to assess the integration of EVs into the transportation network. The transportation sector alone accounts for 40% of greenhouse gas emissions in the State of California (6% higher than the national average).
- A \$10.5 million investment was unveiled at the **University of Waterloo** to fund research into the design and stability of EVs. The research will be conducted at the **Waterloo Centre for Automotive Research (WatCAR)** making the University the largest centre for EV research in Canada.
- **General Motors** is considering **Korea** as one of the next markets in Asia for the **Chevrolet Volt**. The EV is being powered with li-ion batteries from **Compact Power**.
- The **China Ministry of Science and Technology (MOST)** is intending to spend \$111 million on R&D EVs by 2012. The R&D of battery technology has been listed as the most important of the 74 subjects determined by the ministry.
- **Japan** is expected to sign a deal with **Vietnam** to mine rare earth minerals. **Toyota** uses rare earth minerals in production of its hybrid cars has stated it would also be teaming up with Vietnamese mining companies.

A Few More Details:

Hitachi and Johnson Controls announced the signing of a memorandum of understanding (MOU) to collaborate on advanced energy storage. The organizations will evaluate opportunities for collaboration in the fields of motive and non-motive advanced energy storage. In 2000, Hitachi Group began to mass lithium-ion (li-ion) automotive batteries and has produced over 1,200,000 cells primarily for commercial hybrid buses and trucks and other applications.

Source: Johnson Controls

A truck produced by Electronic Vehicles International in Stockton is being used and tested by UPS (as shown in **Exhibit 1**) in San Francisco this week as part of a pilot program.

The vehicle can travel up to 90 miles at 60 mph. The li-ion battery is produced by Valence Technology.

Source: Stockton Record

Exhibit 1: Battery Powered Delivery Truck



Source: Electronic Vehicles International

The Car Charging Group announced plans to install electric vehicle (EV) charging stations at Mall of America in Bloomington, Minnesota. The Mall of America is the largest retail and entertainment complex in the United States. It covers 4.2 million square feet and has over 13,000 parking spaces in its lots.

Source: Car Charging Group

Siemens Energy launched a new product line of EV charging stations that includes solutions for residential, public and commercial applications. The UL listed electric vehicle supply equipment (EVSE) line includes wall-mountable, community multi-level and community multi-level II models. The company's wall-mountable charging station is a 7.2-kW single-output station designed for residential and light commercial applications. Siemens' public outdoor charging stations will be available in single Level II and multi-level designs. Siemens' EV charging stations will offer Coulomb Technologies' ChargePoint® Network.

Source: Siemens

Portugal is on track to open the world's first nationwide EV charging network early next year. The country is planning to replace 10% of all vehicles with EVs by 2020. The MOBI.E charging network (51% controlled by Energias de Portugal) will include 1,300 normal and 50 fast charging stations at shopping

centers, car parks, petrol stations and hotels in 25 towns and cities around Portugal. The open system of charging points will be compatible with all EV brands, including electric motorbikes.

Source: Reuters

Sanyo Electric is planning to slash the cost of manufacturing li-ion batteries used in cars to less than half the current industry average in five years. The plan is to lower the cost to less than 50 yen (or \$0.61) per watt hour in 2015, compared with the current industry average of about 100 yen (or \$1.23). The Kasai plant added facilities in July to boost Sanyo's capacity of lithium-ion car batteries 11-fold to 1.1 million a month. The company could expand manufacturing capacity to produce large-capacity cells for EVs by March 2011 -- raising its output ability to as high as 1.5 million units a month.

Source: Bloomberg

EnergyOne Technologies Signed a Technology License agreement with VS Technology, for the manufacturing of their Nickel Zinc batteries, Battery Management Systems and Composite Modules to be utilized in various energy storage applications. The agreement will enable EnergyOne to manufacture products using raw materials sourced in the United States bringing much needed manufacturing jobs to Kentucky. Under the agreement, VS Technology will provide EnergyOne with energy storage resources for a term of 20 years.

Source: All State Property Holdings

The state Department of Business, Economic Development and Tourism stated energy storage projects in Hawaii and Maui counties are due to receive \$2.1 million in federal stimulus funds. \$1.2 million is going to Maui Electric with \$900,000 is heading to Hawaii Electric Light. The funds from the Department of Energy are intended to expand renewable energy use in Hawaii; like solar power and wind which aren't available all the time.

Source: Associated Press

Transport Canada is joining with Mitsubishi Canada to test two i-MIEVs (innovative electric vehicles) in government facilities and in real-world conditions. Mitsubishi already has test agreements with Hydro-Quebec, the city of Boucherville, BC Hydro and the city of Vancouver. The EV seats four people and has a 330-volt li-ion battery powers a 63-horsepower electric motor. The battery can be recharged on standard household 110-and 220-volt sockets or commercial quick charger.

Source: Montreal Gazette

The California Energy Commission recently announced EV Connect and the Los Angeles County Metropolitan Transportation Authority (Metro) will be conducting a pilot program to assess the integration of EVs into the transportation network and consumer behavior and ridership patterns. The transportation sector alone accounts for 40% of greenhouse gas emissions in the State of California (6% higher than the national average). Completion of this project and its potential as a major transit component will further reduce priority air pollutants and greenhouse gas emissions in the City and County of Los Angeles.

Source: Sun Herald

A \$10.5 million investment was unveiled at the University of Waterloo to fund research into the design and stability of EVs. The federal government will contribute \$3.6 million and GM Canada \$4 million over the next 5 years with the provincial government and private-sector partners are contributing the balance. The research will be conducted at the Waterloo Centre for Automotive Research (WatCAR) making the University the largest centre for EV research in Canada. GM is investing \$1 billion in R&D in Canada to 2016.

Source: London Free Press

General Motors is considering Korea as one of the next markets in Asia for its Chevrolet Volt. The Volt is scheduled to be sold in China beginning in November 2011, but Korea will be considered as a follow-up

market since the Chevrolet brand will be launched in Korea starting next year. The EV is being powered with li-ion batteries from Compact Power.

Source: Joong Ang Daily

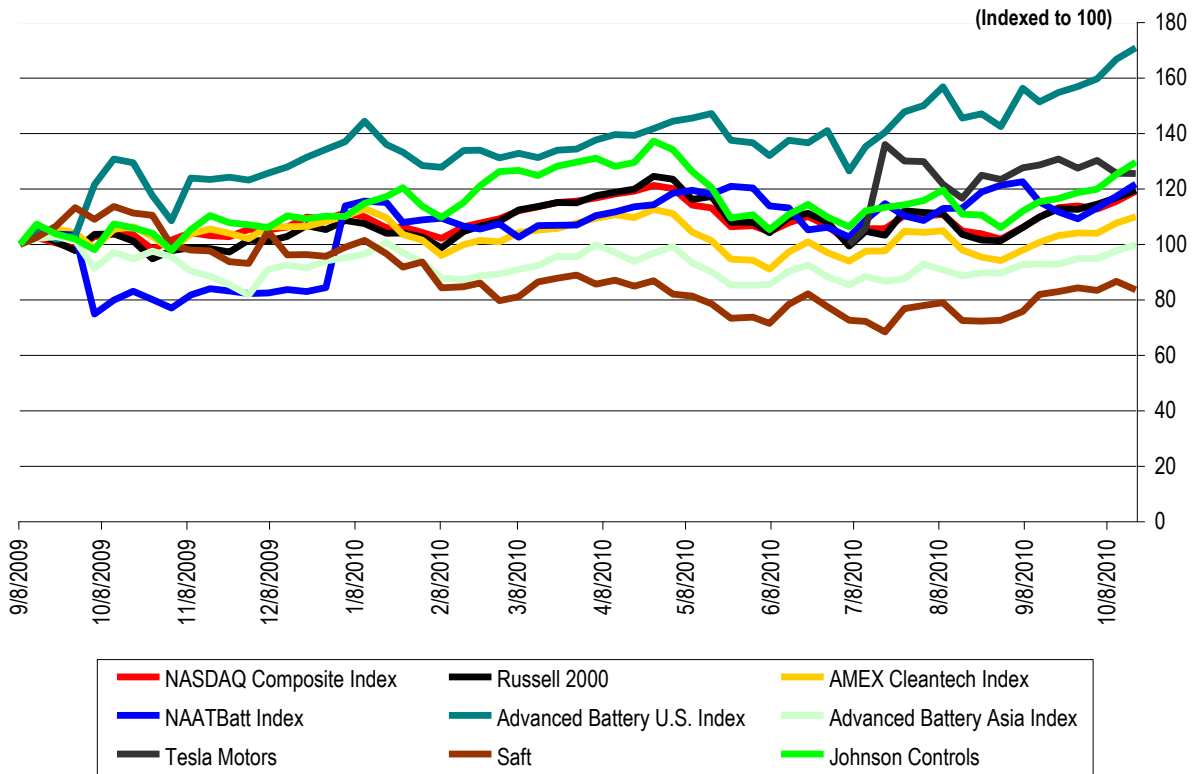
The China Ministry of Science and Technology (MOST) is intending to spend \$111 million on R&D EVs by 2012. The R&D of battery technology has been listed as the most important of the 74 subjects determined by the ministry with a proportion reaching 42%, followed by subject of electric vehicles and electrical power systems with a proportion of 33%. Motor and electronic control technology accounts for 13% and 6% of the total.

Source: China Knowledge

Japan is expected to sign a deal with Vietnam to mine rare earth minerals. A number of Japanese companies already have joint ventures with Vietnamese enterprises to extract the minerals crucial for the manufacture of hybrid vehicle batteries and computer disks. Toyota uses rare earth minerals in production of its hybrid cars has stated it would also be teaming up with Vietnamese mining companies.

Source: Telegrapho.co.uk

Exhibit 2: Indices Performance
(From September 8, 2009)

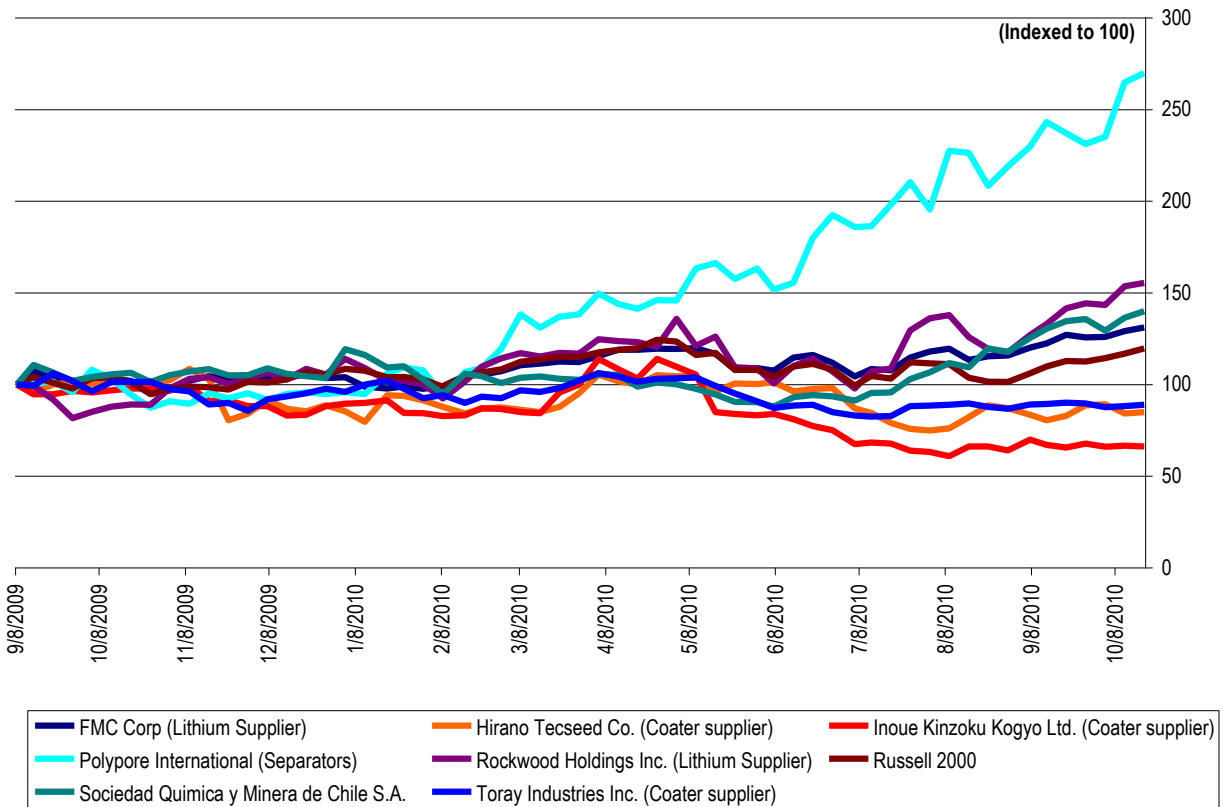


Index	Close on 10/18/2010	52-Wk High	% of 52-Wk High	Performance		
				LTM	YTD	Week
Dow	11,143.7	11,309.0	98.5%	11.5%	6.8%	1.2%
S&P 500	1,184.7	1,219.8	97.1%	8.9%	6.1%	1.7%
NASDAQ	2,480.7	2,535.3	97.8%	14.7%	8.1%	3.3%
Russell 2000	710.1	746.0	95.2%	14.9%	13.1%	4.5%
AMEX Cleantech Index	1,079.0	1,112.5	97.0%	4.5%	1.1%	2.1%

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 3: Supplier Performance
(From September 8, 2009)



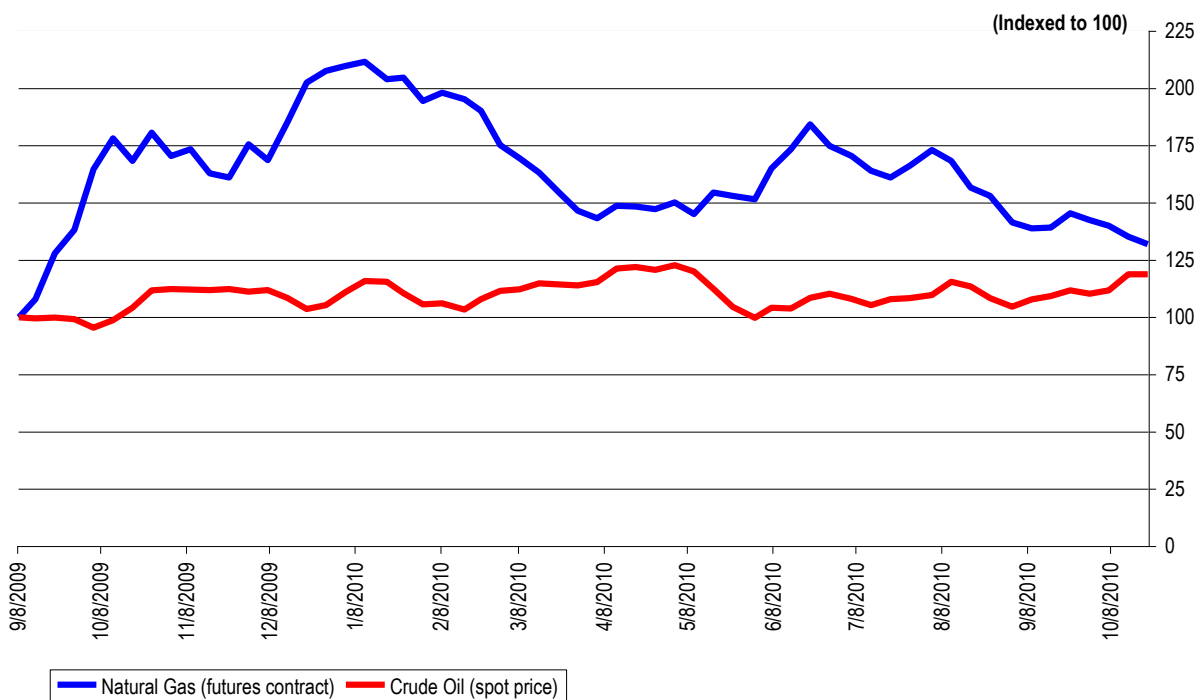
Source: Bloomberg

Exhibit 4: Commodity Prices

Commodity	Price on 10/18/2010	Price on 10/11/2010	Price on 9/17/2010	1 Week Change	1 Month Change
LME Nickel (Cash, \$ per tonne)	23,665	24,465	23,420	(3.3%)	1.0%
LME Lead (cash, \$ per tonne)	2,372	2,270	2,208	4.5%	7.4%

Source: LME

Exhibit 5: Natural Gas and Crude Oil
(From September 8, 2009)



Source: EIA

Executive Director's Notes



FOCUS ON SECONDARY USE

Last Monday, Mike Ramsey's article "Bumpy Road for Electrics" in the Wall Street Journal laid out a sobering assessment of the future of electric vehicles in the United States. Except for the ever optimistic Carlos Ghosn of Nissan, the consensus view in the industry, according to Mr. Ramsey, is that electric drive is in deep trouble.

Ramsey cites the usual suspects: range anxiety, lack of recharging infrastructure, consumer driving habits and, most of all, cost. He suggests that modern electric vehicle sales may follow the history of earlier electric vehicles: car makers will sell several hundred and then pull the plug.

So with government and industry having just spent billions of dollars to promote electric drive and advanced battery manufacture, what is the plan to avoid this train wreck? The plan at this point seems to be to spend more money on research and hope for a breakthrough.

To be sure, the breakthroughs are probably out there. Metal air batteries, advanced anodes, solid state battery technology and the like all hold the prospect of eventually producing batteries that can compete with petroleum on the basis of energy density and cost. But the best guess is that eventually is still a couple decades away. Focusing solely on research isn't a strategy; it is just hope.

A sound strategy needs to focus on what can be done today to bring battery costs down and make electric vehicles attractive to consumers other than wealthy environmental enthusiasts. A central part of that strategy must be to find secondary uses for advanced automotive batteries.

Finding secondary uses for advanced automotive batteries will bring down battery costs. A factory that makes batteries both for PEV's and for stationary applications can amortize its costs over a greater number of products. Reusing retired auto batteries in other applications after the end of their useful lives in vehicles permits their costs to be amortized over a longer term. In the absence of a technological breakthrough, promoting secondary uses for advanced automotive batteries is the fastest and most effective way of addressing the advanced battery cost problem.

Promoting secondary use must become a central part of our national advanced battery strategy. Government and industry need to redouble their efforts to identify who the secondary users of advanced batteries will be and adequately incent or compel their participation.

We must also rethink advanced battery design and the way the federal government supports it. If secondary battery use is essential for the commercial viability of PEV's, then PEV batteries must be designed from the beginning with that secondary use in mind. Federal dollars and tax incentives should not be wasted on products that are functionally unique and economically unviable.

Part of the problem is that the optimal secondary use for advanced automotive batteries has not yet been determined and is not being investigated in any coordinated way. While it is highly likely that the optimal secondary use will be stationary, grid-connected energy storage, there seems to be little coordination between the utility industry, which is experimenting with various types of energy storage, and the automobile industry, which needs to find a secondary use for a very specific type of energy storage. This must change.

The high cost of advanced batteries is the elephant in the room. The other challenges of electric drive pale by comparison. We must focus government policy and our own efforts rigorously on bringing battery costs down. Identifying secondary battery uses, promoting secondary markets, and designing advanced automotive batteries expressly to anticipate those secondary uses and markets is where we must start. And we must start now.



James J. Greenberger
Executive Director

October 22, 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.

- ***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 , 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.eoverviews.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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