

Summary:

For the October 29th issue of NAATBatt's Advanced Battery Weekly, we highlight the ongoing sector activities.

The NAATBatt, U.S. and Asia Indices increased 0.8%, 2.1% and 2.7%, respectively. The S&P 500 and Russell 2000 were relatively flat.

Executive Director James Greenberger writes about the future of the relationship between the Chinese and U.S. battery industries in "**What Role for China in the U.S. Battery Industry**" 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:

- **General Electric** is planning to place an order for "tens of thousands" of electric vehicles (EVs) in about a week. The vehicles manufacturer has not been disclosed. The plan is for about half of the company's sales force of about 45,000 to drive EVs
- **J.D. Power and Associates** expects combined global sales of hybrid- and all-EVs to reach just 5.2 million vehicles in 2020, or only 7.3% of the 70.9 million autos expected to be sold that year. The demand inhibitors include low gas prices, consumer concern about the technology, range anxiety and EV price.
- **Better Place**, with support from the **U.S. Department of Transportation** via the **Metropolitan Transportation Commission**, announced a commitment to bring a switchable battery, electric taxi program to the Bay Area in partnership with the cities of **San Francisco** and **San Jose**. Over the next 3 years, the program will deploy and operate four battery switch stations in the San Francisco to San Jose.
- The **IEEE (Institute of Electrical and Electronics Engineers)** will write guidelines for large-scale electricity storage, focused on hybrid systems that use multiple technologies. Other areas under discussion include drafting guidelines for how to manage load power, demand-side power and building energy use.
- The **City of Knoxville**, the **University of Tennessee** and **UT-Battelle** are the recipients of more than \$1 million of a \$100 million federal grant to expand the solar industry in Tennessee. The grant will be used for the construction of solar-powered charging stations. UT-Battelle is the contractor managing **Oak Ridge National Laboratory**, which will conduct research on solar use after the stations are installed. The project is expected to be completed in June 2012.
- There is an ongoing debate with **Texas'** deregulated electric market over who should provide the charging stations; the electricity distributors or the retailers. The focus is on whether infrastructure costs should be shared by all electric customers or just EV owners.
- **Nissan South Africa (SA)** is in talks with several national government departments, as well as the **Gauteng government**, on the incentives and infrastructure required to launch its Leaf EV in

South Africa. Earlier this year, the **Department of Trade and Industry** unveiled its industrial policy action plan, which advocates the commercialization of the EV in South Africa, which includes manufacturing and infrastructure development.

- American scientists are on track to develop the world's smallest lithium-ion batteries (li-ion) which could be small enough to pour out of a saltshaker. Researchers at **UCLA** are developing next generation batteries that could be no bigger than a grain of sand.
- An international consortium backed by the **Singapore government** launched 10 research projects to develop technology for "next-generation" vehicles. The **Capabilities for Automotive Research** 11-member consortium (that includes chipmaker **Infineon** and **Toyota Tsusho**) will work on areas such as anti-collision steering systems and wireless charging.
- **Reva Motors**, owned by **Mahindra & Mahindra (M&M)**, is planning to enter the China market. The company currently ships EVs to markets such as the UK and Norway.
- **China's Ministry of Industry and Information Technology** and other government ministries are jointly researching new energy vehicles. The government's goals include the development of better engines and batteries for electric vehicles, as the primary strategic direction for the transformation of China's auto industry is to fully electrify cars.

A Few More Details:

General Electric is planning to place an order for “tens of thousands” of electric vehicles (EVs) in about a week. The vehicles manufacturer has not been disclosed. The plan is for about half of the company’s sales force of about 45,000 to drive EVs. GE provides power-generation equipment that helps produce a third of the world’s electricity. The company estimates it could earn \$0.10 from every dollar of EV sales.

Source: Bloomberg

J.D. Power and Associates expects combined global sales of hybrid- and all-EVs to reach just 5.2 million vehicles in 2020, or only 7.3% of the 70.9 million autos expected to be sold that year. The industry is expected to sell about 1 million EVs this year. The demand inhibitors include low gas prices, consumer concern about the technology, range anxiety and EV price.

Source: WSJ

Better Place, with support from the U.S. Department of Transportation via the Metropolitan Transportation Commission, announced a commitment to bring a switchable battery, electric taxi program to the Bay Area in partnership with the cities of San Francisco and San Jose. Over the next three years, the program will deploy and operate four battery switch stations in the San Francisco to San Jose. The program also has the potential to help California and the Bay Area meet their aggressive energy and climate policy goals when scaled to the entire region.

Source: Better Place

The IEEE will write guidelines for large-scale electricity storage, focused on hybrid systems that use multiple technologies. This is part of a broad effort to define standards for smart electric grids. The IEEE 2030 group expects to deliver early next year an overarching set of guidelines on smart grid interfaces. The new guidelines will cover areas including batteries and super capacitors as well as flywheels and compressed air storage. Other areas under discussion include drafting guidelines for how to manage load power, demand-side power and building energy use.

Source: EE Times

The city of Knoxville, the University of Tennessee and UT-Battelle are the recipients of more than \$1 million of a \$100 million federal grant to expand the solar industry in Tennessee. The grant will be used for the construction of solar-powered charging stations. UT-Battelle is the contractor managing Oak Ridge National Laboratory, which will conduct research on solar use after the stations are installed. Knoxville will get 10 solar charging stations for electric vehicles to be installed at two city-owned garages: Market Square Garage and Knoxville Civic Auditorium and Coliseum Parking Garage. Ten will also go on the UT campus: Five are slated for the agriculture campus and five for the main UT campus. Another 25 will be stationed in Oak Ridge. The project is expected to be completed in June 2012.

Source: Knoxville News Sentinel

Texas' deregulated electric market are debating over who should provide the charging stations; the electricity distributors or the retailers. The focus is on whether infrastructure costs should be shared by all electric customers or just EV owners. CenterPoint Energy, which operates the poles and wires that carry power to customers in the Houston area, believes it is best suited to install and manage chargers because it knows what transformers can handle and can plan accordingly for the increased loads chargers will produce. On the other hand, Houston-based Reliant Energy and Dallas-based TXU,

retailers less regulated than the monopoly wires companies, already are establishing a foothold, donating charging stations to cities in the state.

Source: Houston Chronicle

Nissan South Africa (SA) is in talks with several national government departments, as well as the Gauteng government, on the incentives and infrastructure required to launch its Leaf electric vehicle in South Africa. Earlier this year, the Department of Trade and Industry unveiled its industrial policy action plan, which advocates the commercialization of the electric car in South Africa, which includes manufacturing and infrastructure development. If successful, Nissan would have to provide education on the benefits of EVs over traditional vehicles, as a media gathering drew questions such as whether electric vehicles can be used in the rain.

Source: Creamer Media reporter

American scientists are on track to develop the world's smallest lithium-ion batteries (li-ion) which could be small enough to pour out of a saltshaker. Researchers at UCLA are developing next generation batteries that could be no bigger than a grain of sand. These batteries could be used to power the electronics and mechanical components of tiny micro- to nanoscale devices.

Source: Economic Times

An international consortium backed by the Singapore government launched 10 research projects to develop technology for "next-generation" vehicles. The Capabilities for Automotive Research 11-member consortium (that includes chipmaker Infineon and Toyota Tsusho) will work on areas such as anti-collision steering systems and wireless charging. Toyota Tsusho will provide technical expertise on installing batteries that can be wireless charged onto a golf buggy-shaped car.

Source: AFP

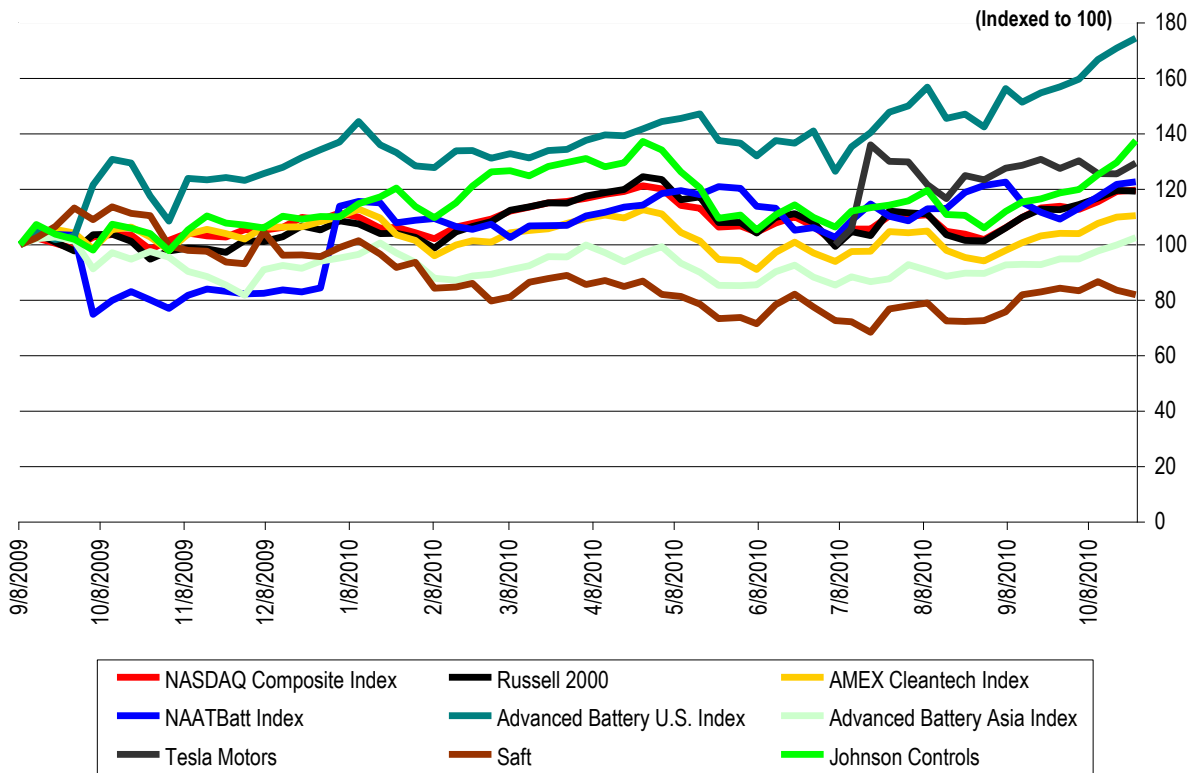
Reva Motors, owned by Mahindra & Mahindra (M&M), is planning to enter the China market. Reva Electric Car will attempt to capitalize on China plans to establish an electric charging network across its major cities to cater for such new energy vehicles. The company has only been able to sell 3,500 cars in 24 countries because of the lack of a battery charging infrastructure. Reva currently ships EVs to markets such as the UK and Norway.

Source: Economic Times

China's Ministry of Industry and Information Technology and other government ministries are jointly researching new energy vehicles. The government's goals include the development of better engines and batteries for electric vehicles, as the primary strategic direction for the transformation of China's auto industry is to fully electrify cars. In June, China's Ministry of Finance stated it would launch a two-year program to promote electric car sales in five cities--Shanghai, Hangzhou, Changchun, Shenzhen and Hefei.

Source: Dow Jones

**Exhibit 1: Indices Performance
(From September 8, 2009)**

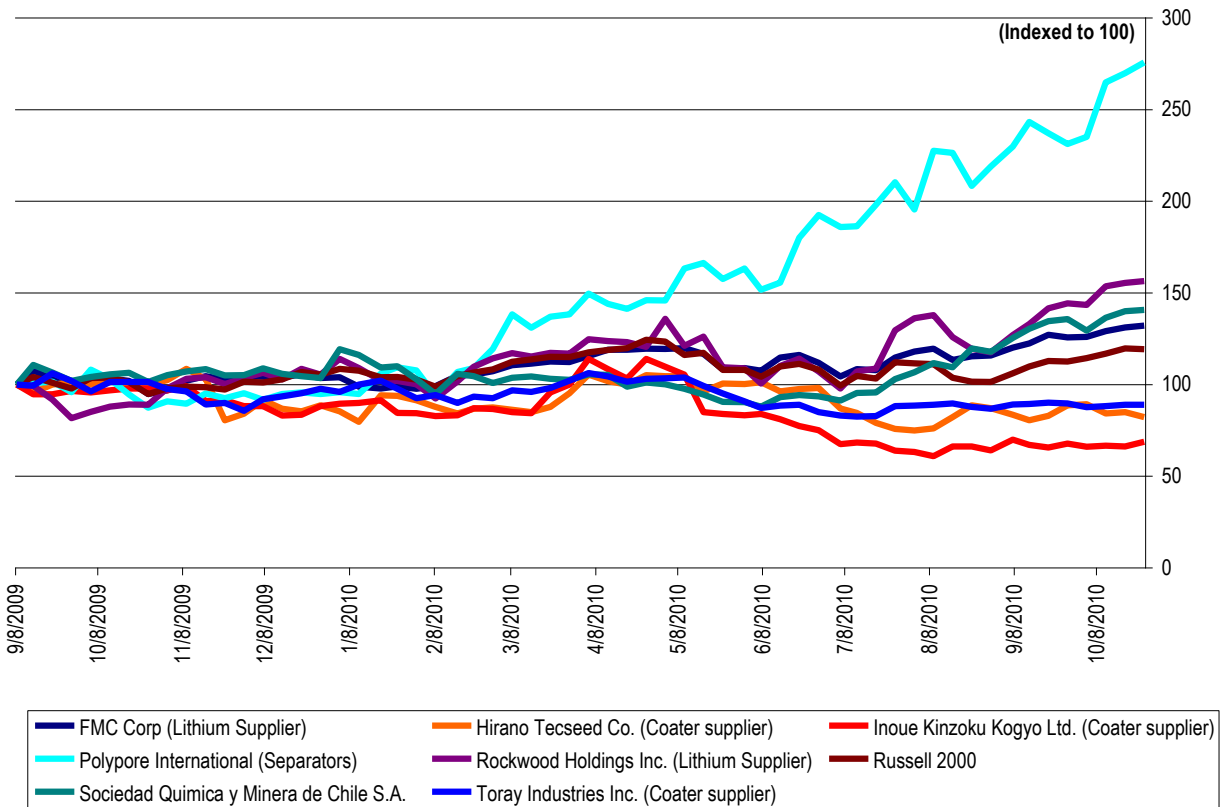


Index	Close on 10/25/2010	52-Wk High	% of 52-Wk High	Performance		
				LTM	YTD	Week
Dow	11,164.1	11,309.0	98.7%	12.0%	7.0%	0.2%
S&P 500	1,185.6	1,219.8	97.2%	9.7%	6.2%	0.1%
NASDAQ	2,490.9	2,535.3	98.2%	15.4%	8.6%	0.4%
Russell 2000	707.9	746.0	94.9%	17.6%	12.7%	(0.3%)
AMEX Cleantech Index	1,083.5	1,112.5	97.4%	6.0%	1.6%	0.4%

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 2: Supplier Performance
(From September 8, 2009)



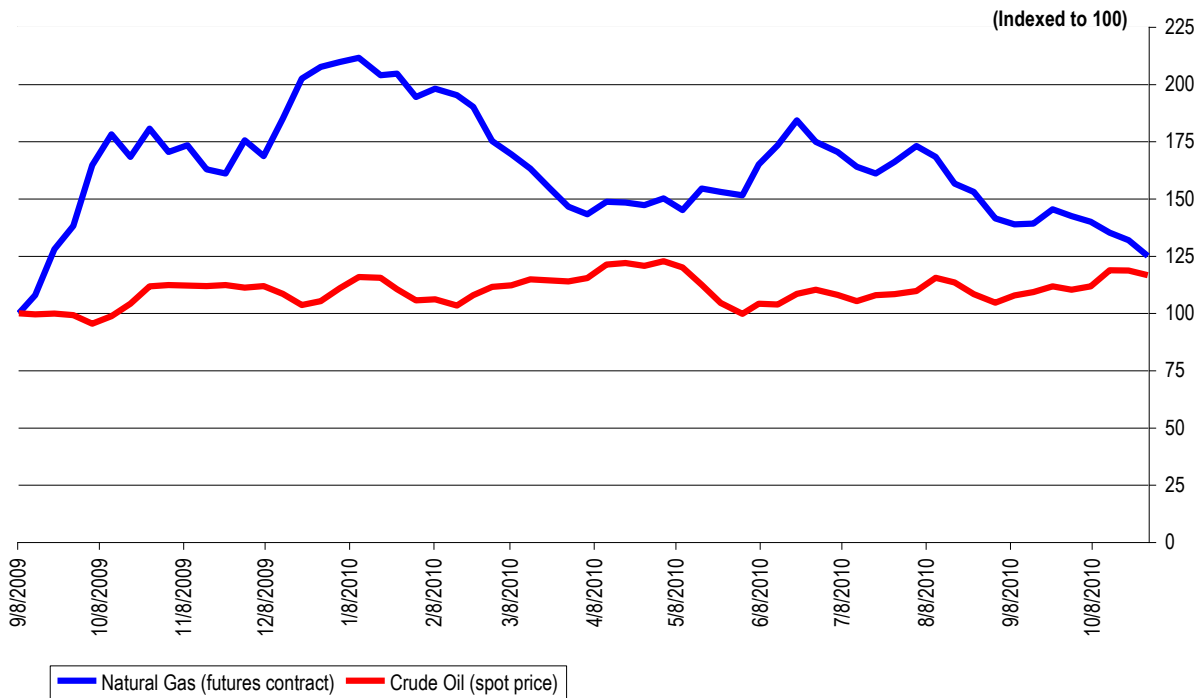
Source: Bloomberg

Exhibit 3: Commodity Prices

Commodity	Price on 10/25/2010	Price on 10/18/2010	Price on 9/27/2010	1 Week Change	1 Month Change
LME Nickel (Cash, \$ per tonne)	23,750	23,665	23,170	0.4%	2.5%
LME Lead (cash, \$ per tonne)	2,555	2,372	2,250	7.7%	13.6%

Source: LME

Exhibit 4: Natural Gas and Crude Oil
(From September 8, 2009)



Source: EIA

Executive Director's Notes



WHAT ROLE FOR CHINA IN THE U.S. ADVANCED BATTERY INDUSTRY?

Earlier this week, a colleague sent me an article from [The Columbus Dispatch](#) about the application of Lio Energy Systems for a U.S. Department of Energy loan guaranty. Lio Energy is a joint venture of Coda Automotive and Lichen Power Battery. The article reported that Lio Energy's application was being held up on account of the fact that Lichen Power is Chinese owned.

While it is tempting to attribute the problems in Lio Energy's loan guaranty application to the calculated, pre-election xenophobia of a few politicians, there is a legitimate question of national industrial policy that is begged, at least indirectly, by Lio Energy's problems at the DOE. That question is whether China is more likely to be a partner or a competitor in efforts to build a robust advanced battery industry in the United States.

This is not a theoretical question. Hundreds of millions, if not billions, of dollars in public and private investment turn on the answer. It goes without saying that the answer should not be determined by pre-election sound bites from politicians. The U.S. advanced battery industry must weigh in on this question, if it is to affect the policies that will most certainly arise from how it is answered.

There are three schools of thought concerning the relationship of China to the U.S. advanced battery industry. The first school holds that China is a natural partner and that cooperation between the U.S. and Chinese battery industries should be encouraged. Advocates of partnership say that China is the natural place to manufacture advanced battery cells. Chinese companies face lower labor costs, enjoy greater government support, and, because of the size of their domestic market, can be satisfied with lower profit margins than any U.S. manufacturer can hope to be. The proper role for U.S. companies, say partnership advocates, is to provide technology, expertise and high margin complex materials to Chinese manufacturing firms. The combination of Chinese manufacturing and U.S. technology would be a juggernaut that could dominate the high growth advanced battery sector for decades.

The second school sees Chinese manufacturers more as competitors than as partners. The second school holds that the U.S. lead in technology and expertise is precarious and will prove illusory if China gains control of cell manufacturing. Transferring technology to partners who are fully capable of copying and improving upon it in a few short years is not a good long term strategy, they say. Moreover, advocates of the second school point out that manufacturing high quality, automotive grade cells is very complex and involves processes that can be highly automated. Given the relative difficulty of transporting advanced battery cells over distance, manufacturing advanced cells is exactly the type of industry in which U.S. manufacturers may be able to compete with Chinese manufacturers.

The third school agrees with elements of the first two views, but points out that advanced battery cells are (or soon will be) a strategic commodity whose domestic manufacture must be sustained whether or not it is economic to do so in the short term. Third school advocates differ over whether U.S. advanced battery manufacturers can successfully compete with Chinese manufacturers. Instead they point to the rare earth metals sector as a cautionary reminder of the dangers posed by lack of supply diversity for strategic goods. Third school advocates also talk about supply chain leverage. The Chinese government hopes to build whole new domestic industries based on its control of rare earth metals, just as the Japanese government may have tried to build a computer hardware industry based on control of semiconductors in the 1980's. If advanced battery cells prove to be a similar lynch pin for the future automotive industry, we outsource their manufacture to China at our peril.

The question of what the role of China should play in the U.S. advanced battery industry is very complicated. But industry members must discuss it and speak with a common voice, so that policy makers in Washington will know what to do. This December, the NAATBatt board will meet in Louisville immediately prior to the 2010 NAATBatt Annual Meeting and Conference. The board will discuss the question of China's role and attempt to formulate an industry position on it. If you have a view, please seek out one of the members of our board and make it known. Better yet, join NAATBatt, if you have not done so already, and express your view first hand. I look forward to seeing you in Louisville for this interesting and important discussion.



James J. Greenberger
Executive Director

October 29, 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.

- ***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: shmued33@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.eoverview.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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