NAATBatt
Advanced Battery Weekly

Summary:

For the September 23rd issue of NAATBatt's Advanced Battery Weekly, we highlight the ongoing sector activities.

Executive Director James Greenberger suggests that Chinese attempts to acquire U.S. "green" technology and know-how are not "shakedowns" but invitations to negotiate, to which the U.S. government needs to respond. Read "***Shakedown Complaint Misses the Point but Highlights a Need***" in the Executive Director's Notes portion of this newsletter below.

The NAATBatt and Asia Battery Indices declined 9.3% and 1.8%, respectively. The U.S. Battery Index grew 5.7%. The S&P500 and Russell 2000 increased 3.6% and 3.3%, respectively.

Key Highlights:

- **Duane Reade** announced a partnership with **Smith Electric Vehicles** to add '**Newton**' electric commercial trucks (etrucks) to its delivery fleet. The lithium-ion (li-ion) battery for the initial deliveries is provided by **Valence Technology**.

- **SAIC Motor** and **General Motors** have signed an agreement for the co-development of a new electric vehicle (EV) architecture in **China**. The **Pan Asia Technical Automotive Center** (**PATAC**) will serve as the development center for the architecture.

- **AeroVironment** has installed **Hawaii's** second hotel-sited charging station. The charging station at the **Marriott Waikiki** is one of up to 320 that the company plans to install across the state under an $820,000 state grant paid for with federal stimulus money.

- **Toray Industries** unveiled a two-seater prototype carbon fiber EV that which weighs about 846 kilograms (1,816 lbs) is 40% lighter than most manufactured EVs to date. The **Teewave AR1** can travel 185 kilometers (114.9 miles) on a single full charge.

- **Saft** has launched an automated li-ion battery factory, in **Jacksonville**, **Florida**. This is the company's 16th facility.

- **General Electric** and **General Motors** have agreed on a pilot installation of charging stations in **Shanghai**. As part of the agreement, GE also agreed to buy Volt EVs for use at its corporate campus in Shanghai.

- **Hyundai Motor** is not planning to produce an all-EV. **Kia** will focus on all-EVs, while Hyundai will work on plug-in hybrids and hydrogen fuel-cell vehicles.

- **Japan's** three carbon fiber suppliers (**Toray Industries**, **Toho Tenax** and **Mitsubishi Rayon**) are leading a drive to adopt the lightweight carbon fiber (CF) for automobiles. According to **BMW**, CF is used for about 30% of the vehicle's body, cutting its weight by about 100 kilograms.

- **Trojan Battery** (a manufacturer of deep-cycle batteries) and **Palladium Energy** (lithium-based) have formed a strategic alliance to develop clean energy battery solutions for a broad range of industries.

- **Car Charging Group** announced that it has signed a contract with **Laxmi of Palm Bay** to provide charging services at its **Comfort Suites** hotel in **Palm Bay**, **Florida**. The company plans

to install Level II, 240-volt, **ChargePoint® Networked Charging Stations** made by **Coulomb Technologies**.

- **350Green** has agreed to purchase and install more than 400 charging stations from **Coulomb Technologies**. The company is building out a national network of more than 1,000 charging stations, with projects under way in **New York**, **Pennsylvania**, **Illinois**, **Indiana**, and **California**.

A Few More Details:

Duane Reade announced a partnership with Smith Electric Vehicles to add Newton etrucks to its delivery fleet. Duane Reade is the first retail pharmacy in the United States to choose fleet electrification through a pilot program. This program is part of a continued energy initiative at the company, whereby all new and renovated stores feature 95% to 98% low-heat LED lighting, translating to approximately 40% less power consumption each year. The li-ion battery for the initial deliveries is provided by Valence Technology.
Source: Duane Reade

SAIC Motor Corp and General Motors have signed an agreement for the co-development of a new electric vehicle (EV) architecture in China. The Pan Asia Technical Automotive Center (PATAC) – SAIC and GM's engineering and design joint venture (JV) in Shanghai – will serve as the development center for the architecture. Joint teams from the parent companies will also cooperate on the development of key components and vehicle structures. The vehicles will first be sold in China under Shanghai GM and SAIC brands.
Source: General Motors and China Daily

AeroVironment has installed Hawaii's second hotel-sited charging station. The charging station at the Marriott Waikiki is one of up to 320 that the company plans to install across the state under an $820,000 state grant paid for with federal stimulus money. The company also announced plans to install additional charging stations at Outrigger's OHANA Waikiki East, Embassy Suites Waikiki Beach Walk and Wailea Beach Marriott on Maui.
Source: AeroVironment

Toray Industries unveiled a two-seater prototype carbon fiber EV that which weighs about 846 kilograms (1,816 lbs) is 40% lighter than most manufactured EVs to date. The Teewave AR1 (as shown in **Exhibit 1**) can travel 185 kilometers (114.9 miles) on a single full charge. The company is planning to mass supply auto makers with carbon fiber by 2015.
Source: WSJ

Exhibit 1: The Carbon Fiber Teewave AR1

Source: European Pressphoto Agency

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Saft has launched an automated li-ion battery factory, in Jacksonville, Florida. This is the company's 16th facility. Saft was presented with incentives from the state of Florida and the city of Jacksonville to build the plant, and construction of the 235,000-square-foot facility was further funded by a $95.5 million federal grant from the Department of Energy under the American Recovery and Reinvestment Act.
Source: Saft

General Electric and General Motors have agreed on a pilot installation of charging stations in Shanghai. As part of the agreement, GE also agreed to buy Volt EVs for use at its corporate campus in Shanghai. GM plans to launch the Volt in December in China.
Source: Associated Press

Hyundai Motor is not planning to produce an all-EV. Kia will focus on all-EVs, while Hyundai will work on plug-in hybrids and hydrogen fuel-cell vehicles. Under the new move, Kia will manufacture Hyundai Motor Group's first high-speed EVs under the project name 'TAM'. These are scheduled to hit the market at the end of 2011. The nation's first electric vehicle, BlueOn, developed by the group's research institute in 2010, will also be rolled out as a Kia brand later this year.
Source: The Chosunilbo

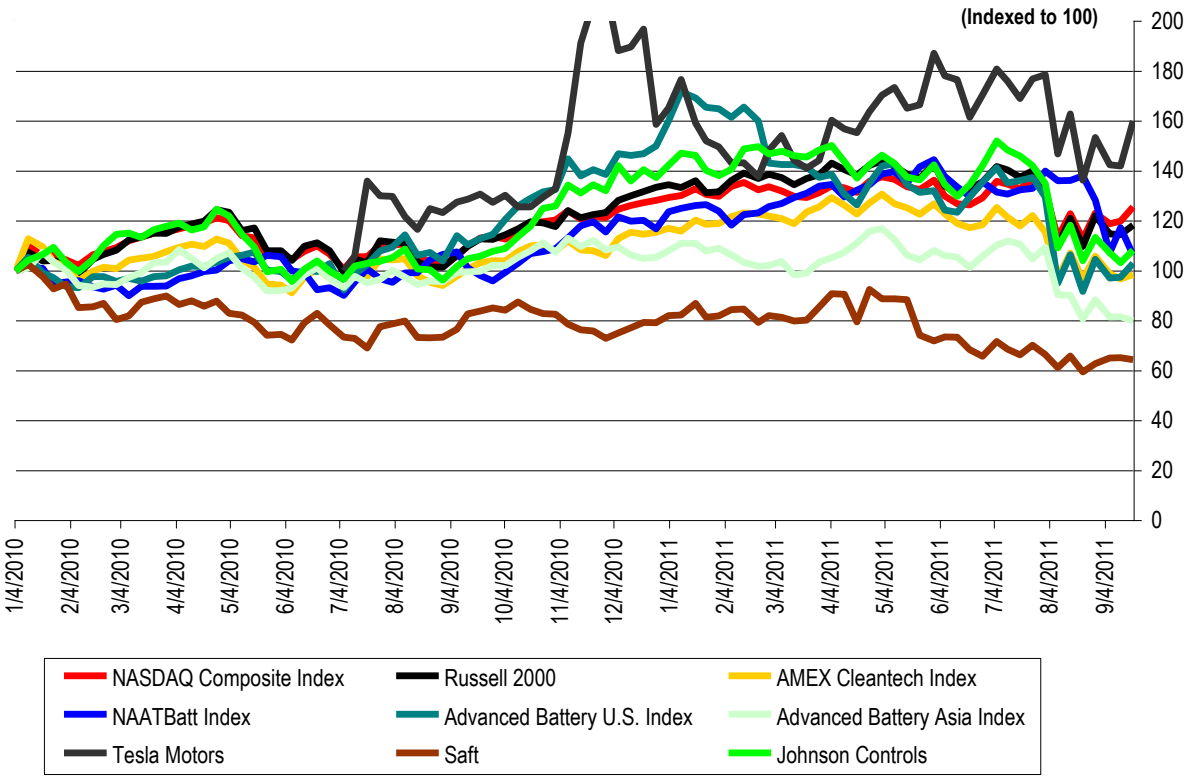
Japan's three carbon fiber suppliers (Toray Industries, Toho Tenax and Mitsubishi Rayon) are leading a drive to adopt the lightweight carbon fiber (CF) for automobiles. According to BMW, CF is used for about 30% of the vehicle's body, cutting its weight by about 100 kilograms. Market researcher Fuji-Keizai Co. forecasts that production of eco-friendly vehicles, such as electric cars and gas-electric hybrids, will shoot up from 890,000 units in 2010 to 32 million in 2025.
Source: Asahi Shimbun

Trojan Battery (a manufacturer of deep-cycle batteries) and Palladium Energy (lithium-based) have formed a strategic alliance to develop clean energy battery solutions for a broad range of industries. The companies will explore the development of lithium-based battery packs for use in Trojan's key market segments, which include renewable energy, golf, transportation, floor machine, aerial work platform, marine and recreational vehicles.
Source: Palladium Energy

Car Charging Group announced that it has signed a contract with Laxmi of Palm Bay to provide charging services at its Comfort Suites hotel in Palm Bay, Florida. The company plans to install Level II, 240-volt, ChargePoint® Networked Charging Stations made by Coulomb Technologies. Comfort Suites' guests now have access to the ChargePoint Network that will enable drivers to benefit from ChargePoint mobile apps (iphone, Blackberry, and Android), mapping services and driver support services.
Source: Car Charging Group

350Green has agreed to purchase and install more than 400 charging stations from Coulomb Technologies. The company is building out a national network of more than 1,000 charging stations, with projects under way in New York, Pennsylvania, Illinois, Indiana, and California. 350Green is installing both Level 2 and DC Fast chargers in locations through partnerships with retailers such as Walgreens and real estate developers such as Simon Property Group.
Source: Coulomb Technologies

Exhibit 2: Indices Performance
(From January 4, 2010)

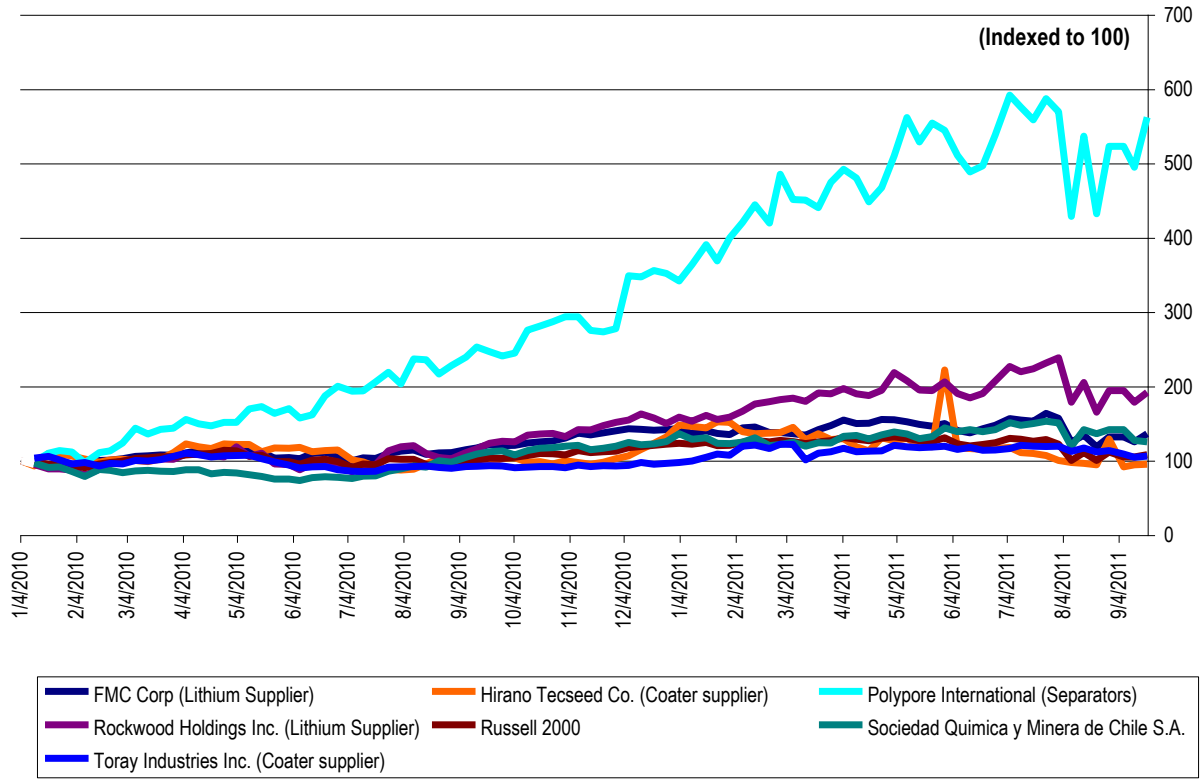


Index	Close on 9/19/2011	52-Wk High	% of 52-Wk High	Performance LTM	YTD	Week
Dow	11,401.0	12,928.5	88.2%	7.5%	(2.3%)	3.1%
S&P 500	1,204.1	1,370.6	87.9%	6.9%	(5.3%)	3.6%
NASDAQ	2,612.8	2,887.8	90.5%	12.5%	(2.9%)	4.7%
Russell 2000	702.2	868.6	80.8%	7.6%	(12.1%)	3.3%
AMEX Cleantech Index	965.8	1,298.6	74.4%	(3.1%)	(15.9%)	1.8%

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 3: Supplier Performance
(From January 4, 2010)



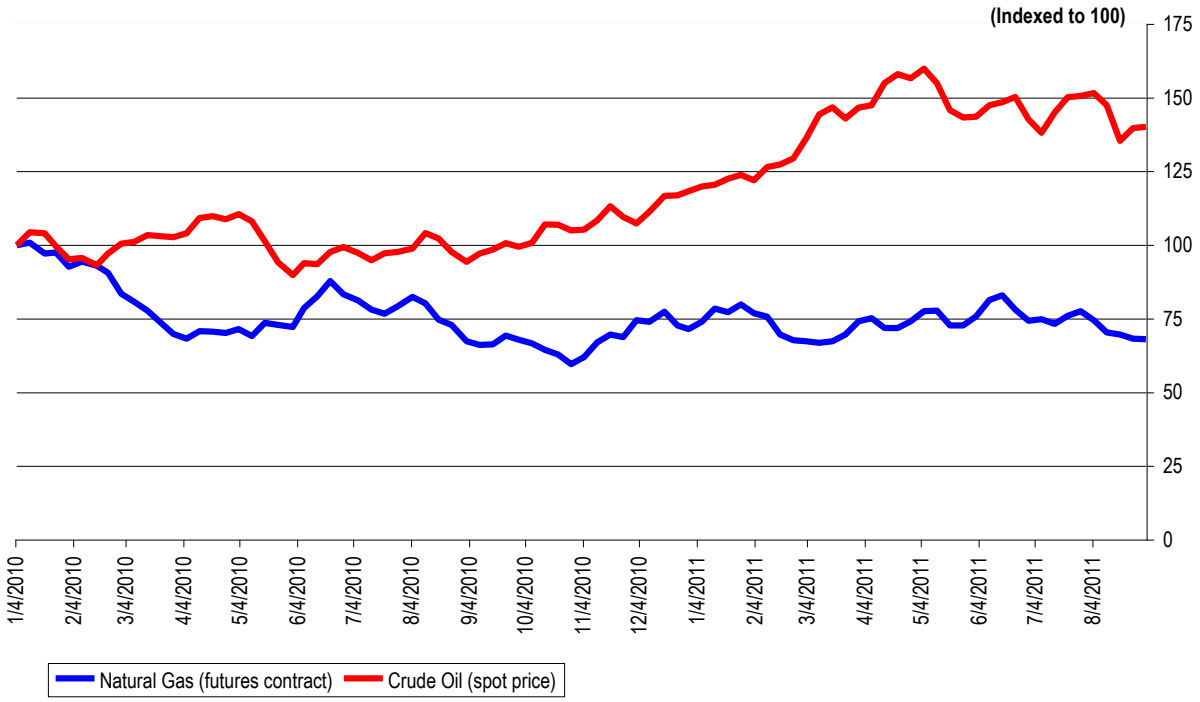
Source: Bloomberg

Exhibit 4: Commodity Prices

Commodity	Price on 9/19/2011	Price on 9/12/2011	Price on 8/19/2011	1 Week Change	1 Month Change
LME Copper (Cash, $ per tonne)	8,415	8,645	8,781	(2.7%)	(4.2%)
LME Lead (cash, $ per tonne)	2,320	2,425	2,316	(4.3%)	0.2%
LME Nickel (cash, $ per tonne)	21,085	20,850	21,550	1.1%	(2.2%)

Source: LME

Exhibit 5: Natural Gas and Crude Oil
(From January 4, 2010)



Source: EIA

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Executive Director's Notes

SHAKEDOWN COMPLAINT MISSES THE POINT BUT HIGHLIGHTS A NEED

Last week Senator Carl Levin and Senator Debbie Stabenow wrote to U.S. Trade Representative Ron Kirk complaining that China is attempting "shakedowns" of American companies in order to obtain their technology secrets. The Michigan Senators cited China's purported attempt to condition the Chevy Volt's rollout in China on General Motor's willingness to share the Volt's technology with General Motor's Chinese partners. In her letter, Senator Stabenow claimed that "forced technology transfers are already allowing Chinese companies to use American technologies to compete against American companies in industries such as water purification, high-speed trains and wind turbines…"

While it is possible that Senators Levin and Stabenow have their facts right, they are wrong to call what is going on a "shakedown". What is going on between China and U.S. technology companies hoping to do business in China is just business—a haggling over price among merchants, a dance old as time.

There is no question that Chinese companies, with the strong support and active involvement of their government, want to acquire U.S. electric vehicle, energy storage and smart grid technology. U.S. technology in these areas is the best in the world. Although Chinese technology is in some areas very good and getting better, U.S. "green" technology has a huge head start and is improving even more rapidly. If China wants to manufacture top quality electric vehicles and a build a world-class smart grid, it must acquire American technology.

By the same token, American companies that want to make substantial EV and smart grid system sales must go to China. That is where the market is, and that is where it is likely to be for the next several years. To make sales, American companies must sell products. Among the products the Chinese want to buy is technology and know-how. Technology and know-how are saleable business assets just like physical inventory. The buyer and the seller must simply agree on a price.

Nothing is wrong with selling technology and know-how. As I wrote last week, selling technology is what the U.S. does as a country. It is what we have done for decades, and no one does it better than we do. The key to making this work as a business model is to be sure that once you have sold the current technology and know-how, you are the first to develop the next generation technology. That is why government support for technology research and development is so critically important for the long-term economic health of the United States.

But Senators Levin and Stabenow have a legitimate concern. For while it may be OK for U.S. companies to sell their technology and know-how to China, the terms of those sales will be negotiated and determined by the relative negotiating leverage of the parties to the transaction. Here U.S. companies, which negotiate deals independently with Chinese counterparts that are often government-owned or government-directed, are at a serious disadvantage. The leverage held by the Chinese party (i.e., access to a market comprising one quarter of the earth's population) is huge. General Motors is a large and sophisticated company that can probably take care of itself. But for the vast majority of U.S. companies facing requests for technology transfer, it is a one-sided negotiation. This should rightfully concern Senator Levin and Senator Stabenow, as the "green" technology and know-how being traded away on unfavorable terms may well have been developed with U.S. taxpayer dollars.

There is a useful role for the U.S. government to play here, and one that does not involve the government writing a check. U.S. electric vehicle, energy storage and smart grid companies need access to the Chinese market for U.S.-made products. They are willing to sell their products, and their technology and know-how, for a good and fair price. What they need is the negotiating leverage to get that price. This is what the U.S. government could provide. Large framework multi-company deals with China involving the sale of American-made products and the transfer of U.S. "green" technology—such as the smart grid deal I suggested last week—is the key to revitalizing the American economy and leveling the playing field in China.

We have to start thinking more like the Chinese in dealing with the Chinese. Notwithstanding their thirty year hiatus from capitalism, the Chinese have been negotiating business deals for four thousand years. It is concerning, therefore, to see our political leaders look at a tough business position, see a "shakedown", and call for lawyers. American companies need sales, not investigations and lawsuits. Let's call for negotiators, not lawyers, and get some deals done.

James J. Greenberger
Executive Director

September 23, 2011

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NAATBatt Membership Applications for 2011

2011 Membership Applications and Dues Structure

NAATBatt is accepting applications for membership for the 2011 calendar year. Membership dues for 2011 are $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. Please click on http://naatbatt.org/membership-inquiry/ and indicate that you are interested in a 2011 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, including our recently concluded conference on PEV's and the grid, 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.

NAATBatt recently concluded the highly successful meeting and conference entitled "The Impact of PEV's on T&D Systems: Challenges and Solutions", in Louisville, Kentucky. The conference was the largest cross-industry event to date focused on the impact of plug-in electric vehicles on the grid. The conference outlined the improvements and upgrades that utilities must make to the grid in order for it to accommodate mass-market electric vehicles. The conference emphasized the critical role that grid-connected energy storage can play in promoting vehicle electrification in the United States. Emphasizing the necessary relationship between grid-connected storage and electric vehicles is one of NAATBatt's primary missions.

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 NAATBatt needs your support to do it. Please join us.

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North American Industry Announcements and Calendar

Presentations from the NAATBatt 2011 Annual Meeting and Conference Now Available: Speaker presentations, speaker bios and attendee lists from the just concluded NAATBatt's 2011 Annual Meeting and Conference are now available on the NAATBatt Web site. Go to www.naatbatt.org and navigate to the 2011 Annual Meeting and Conference link to view them. The links are password protected, and the password is available to NAATBatt members and conference attendees for no charge. Others may purchase access to the presentations for $250. Please contact Jim Greenberger at jgreenberger@naatbatt.org for your password. Photos from the conference will be posted shortly.

Presentations from the Workshop on Distributed Energy Storage Posted: Presentation materials, handbooks, attendee lists and working group discussion summaries from the April 21, 2011 DOE/NAATBatt Workshop on Issues in Distributed Energy Storage have been posted on the NAATBatt Web site at: www.naatbatt.org. The materials are available for review to all Workshop registrants and to all NAATBatt members. Please contact Jim Greenberger at jgreenberger@naatbatt.org for your password.

Presentations from the NAATBatt 2010 Annual Meeting and Conference are Available: NAATBatt's 2010 Annual Meeting and Conference entitled "The Impact of PEV's on T&D Systems: Challenges and Solutions" was a great success. More than 40 industry experts presented and the conference on topics relating to how the grid was going to accommodate the new load that will be generated by plug-in electric vehicles. Copies of the speaker presentations are available on a secured portion of the conference Web site. Access to the Web site is free to NAATBatt members and conference attendees. Access to the presentations is now available to all other for the price of $250. Please contact Jim Greenberger at jgreenberger@naatbatt.org for more information about accessing the presentations.

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, and committees 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.

- ***Utility Scale Flexible Power Summit***: The Utility Scale Flexible Power Summit will be held on **September 27-28, 2011** in Denver, Colorado. The utility power conference will examine issues currently limiting optimal generation and transmission flexibility, as well as exploring the potential of future storage and financing options. Information about the Summit can be found at: http://www.greenpowerconferences.com/EF/?sSubSystem=Prospectus&sEventCode=RE1109US&sSessionID=5151b42fadaadaeda7c8206f42773de2-4205310.

- ***Developing Grid Storage Projects*:** Infocast will produce the Developing Grid Storage Projects conference in Dallas, Texas on **October 5-6, 2011**. The conference will discuss the regulatory drivers and business models for grid storage projects in the United States. NAATBatt will be a supporting organization of the conference.

- ***The Business of Plugging In***: The Center for Automotive Research will host The Business of Plugging In conference at the Hyatt Regency in Dearborn, Michigan on **October 11-13, 2011**. The conference will examine the challenges of moving EV's from early adoption to mass market acceptance and will feature a ride-and-drive event highlighting the newest EV's. More information can be found at: www.bpiconference.com.

- ***EESAT 2011***: The biannual international Electrical Energy Storage Applications and Technologies conference (EESAT) will be held at the San Diego Marriott Hotel and Marina in San Diego, California on **October 16-19, 2011**. The conference will highlight specific electrical energy storage applications and technologies, especially as they relate to the electricity grid. More information about EESAT 2011 can be found at: http://www.sandia.gov/eesat/index.html.

- ***The Battery Show***: The Battery Show conference and exposition will be held in Novi, Michigan on **October 25-27, 2011**. The Battery Show is North America's largest free to attend exhibition for advanced batteries. The exhibition showcases the latest battery technologies and solutions, ranging from electric vehicle applications to raw material suppliers. Its two-track business and technology conference examines battery market development and opportunities, including how technical advances are likely to impact performance, safety and cost. For more information on The Battery Show or to register, visit www.thebatteryshow.com.

- ***Lithium Battery Power***: Knowledge Foundation will host the 7th Annual International Conference on Lithium Battery Power on **November 7-8, 2011** in Las Vegas, Nevada. The conference will examine advances in lithium-ion battery technology. The conference Web site can be accessed at: http://www.knowledgefoundation.com/viewevents.php?event_id=254&act=evt

- ***7th Lithium Mobile Power Conference***: Knowledge Foundation will host the 7th Lithium Mobile Power Conference on **November 7-8, 2011** in Las Vegas, Nevada immediately following the battery safety conference. The conference will provide a general survey of the lithium-ion battery industry. The conference Web site can be accessed at: http://www.knowledgefoundation.com/viewevents.php?event_id=254&act=evt.

- ***2nd Battery Safety Conference***: Knowledge Foundation will host the 2nd Battery Safety Conference on **November 9-10, 2011** in Las Vegas, Nevada. The conference will discuss safety incidents and product recalls regarding lithium-ion batteries. The conference Web site can be accessed at: http://www.knowledgefoundation.com/viewevents.php?event_id=253&act=evt

- ***1st North American & Asian Lithium-Ion Technology Conference:*** The North American & Asian Lithium-Ion Technology Conference will be held on **January 12, 2012** at the University of Nevada Las Vegas in Las Vegas, Nevada. The conference is co-sponsored by UNLV and an affiliate of the Lion Battery Industry Association of South China. More information about the conference can be found at: http://lbiana.org/industry-events/

- ***International Battery Association – Pacific Power Source Symposium Joint Meeting 2012***: The 2012 meeting of the International Battery Association and Pacific Power Source Symposium

will be held on **January 9-13, 2012** at the Hilton Waikoloa Village in Hawaii. Information about the program may be viewed at: http://www.soest.hawaii.edu/PPSS/index.htm.

- ***2nd Annual 10X Advanced Battery R&D***: The 10x Advanced Battery R&D conference: Breaking Barriers in Advanced Battery Performance and Value will be held on **January 23-24, 2012** in Santa Clara, California. The conference will examine next generation technologies that may dramatically reduce battery costs and/or increase battery energy density. NAATBatt is a supporting organization of the conference.

- ***12 International Advanced Automotive Battery Conference***: The 2012 International Advanced Automotive Battery Conference (AABC) will be held on **February 6-10, 2012** in Orlando, Florida. The program will feature five days of intensive meetings, symposia and tutorials. Information about the program can be found at: http://www.advancedautobat.com/.

- ***International Electric Vehicle Symposium*:** The Electric Drive Transportation Association will produce the 26th international Electric Vehicle Symposium and exposition (EVS26) on **May 6-9, 2012** in Los Angeles, California. Information about EVS26 can be found at www.EVS26.org.

- ***IEEE PES Transmission and Distribution Conference and Exposition***: The IEEE PES Transmission and Distribution Conference will be held in Orlando, Florida on **May 7-10, 2012**. The conference will focus on innovation in power delivery systems, including storage systems. Information about the conference can be viewed at: http://www.ieeet-d.org/.

- ***5th Symposium on Energy Storage: Beyond Lithium Ion*:** The 5th Symposium on Energy Storage: Beyond Lithium Ion will be held in Berkeley, California on June 5-7, 2012. The Symposium will focus on next generation battery technologies, such as silicon anode technology, lithium sulfur batteries and lithium air. More information can be found at: http://bestar.lbl.gov/bli5/program/.

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