

Summary:

For the April 1st issue of NAATBatt's Advanced Battery Weekly, we highlight the ongoing sector activities.

The NAATBatt and Asia Indices increased by 2.2% and 4.6%, respectively. The U.S. Index declined by 2.9%. The Russell 2000 and S&P 500 increased by 1.1% and .9%, respectively.

Executive Director James Greenberger comments on President Obama's speech at Georgetown University, in which he advocated increasing domestic petroleum production. Read "**Electrify, Baby, Electrify**" in the Executive Directors Notes portion of this newsletter below.

Key Highlights:

- **DHL Express** is rolling out a 'green' fleet of commercial delivery vehicles in **Manhattan**. The fleet includes 30 **Ford Transit Connect Electrics** whose lithium-ion (li-ion) batteries are supplied by **Johnson Controls-Saft**.
- **General Motors** is developing a **Buick** brand car using **Chevrolet Volt** technology in an effort to expand its line of fuel-efficient vehicles. Sales of the electric vehicle (EV) could begin in 2013.
- Shipments of **Nissan Leaf** EVs have recently arrived in the U.S. The 1,500 new Leafs will enable Nissan to begin fulfilling its ~2,000 U.S. pre-orders.
- **Kansas University** has entered into a partnership with **Schneider Electric** to bring the first EV charging station to **Lawrence, Kansas**. The charging station, which will look like a gasoline pump, will have two cords so two EVs can be simultaneously charged.
- **Dow Kokam** will be supplying **eCAMION** with li-ion technology to provide stationary energy storage solutions for a Canadian utility project supported by **Sustainable Development Technology of Canada**. The energy system will be tested with a large urban **Ontario** distribution company.
- The **Car Charging Group** has signed a deal with **SJTS Developers** to provide charging services at the **Ramada Inn** in **Strasburg, Virginia**. The company will install **Level II ChargePoint®** Networked Charging Stations manufactured by **Coulomb Technologies**.
- **International Battery** has been selected by **Sunverge Energy** to provide an 8.2 kilowatt-hour (kWh) li-ion battery to be used as the energy storage component of Sunverge's Solar Integration System (SIS). The integrated distributed energy system will provide a turnkey solar solution to support a 'Net-Zero Home Energy' demonstration at the **Philadelphia Navy Yard's Clean Energy Innovation Hub**.
- **Coulomb Technologies** announced new features for its **ChargePoint** smart phone apps for the **Blackberry** and **iPhone**. The app is the only app available that provides EV drivers real-time charging station status.
- The **City of Tavares, Florida** has installed four charging stations. The **U.S. Department of Energy** paid \$34,000 for the stations and taxpayers will pay for the power over the next 6 months.

- The **Washington Senate** approved a bill to impose a \$100 annual fee on electric cars to make up for lost gas tax revenue. Drivers would pay the fee every year when they renew their EV registration under the bill.
- The **United Illuminating Company** has installed its first residential EV charging station in **Easton, Pennsylvania**. The charging station owner is driving a **Chevy Volt** and hasn't used any gas so far during a daily 24-mile commute—equating to about \$0.07 per mile.
- A consortium led by **Delta Electronics** stated plans to spend NT\$1 billion (US\$34 million) on research and development to produce Taiwan's first extended-range electric buses by 1H13. Delta's collaborators include the **Industrial Technology Research Institute** and the government-funded **Automotive Research and Testing Center**.

A Few More Details:

DHL Express is rolling out a 'green' fleet of commercial delivery vehicles in Manhattan. The company will operate 30 Ford Transit Connect Electrics and 50 hybrid trucks (as shown in **Exhibit 1**). The lithium-ion (li-ion) batteries for the electric vans are supplied by Johnson Controls–Saft.

Exhibit 1: DHL Green Vehicles



Source: Deutsche Post DHL

General Motors is developing a Buick brand car using Chevrolet Volt technology in an effort to expand its line of fuel-efficient vehicles. The EV could begin sales in 2013. The company is also working on a version of the Opel Ampera (as shown in **Exhibit 2**) that was modeled after the Volt. The EV is scheduled to go on sale in Europe this year.

Exhibit 2: Opel Ampera Electric Drive Auto



Source: *Bloomberg*

Shipments of Nissan Leaf electric vehicles (EVs) have recently arrived in the U.S. The 1,500 new Leafs will enable Nissan to begin fulfilling its ~2,000 U.S. pre-orders. In January, Nissan reported 87 LEAFS delivered and only 67 in February. Prior to these shipments, just 173 LEAFS have been delivered to the U.S. according to the Japan Auto Dealers Association (JADA).

Source: *Plug-in Cars*

Kansas University has entered into a partnership with Schneider Electric to bring the first EV charging station to Lawrence, Kansas. The charging station, which will look like a gasoline pump, will have two cords so two EVs can be simultaneously charged. However, one of those chords will be able to fully power a car much faster than the eight hours it typically takes

Source: *Lawrence Journal World*

Dow Kokam will be supplying eCAMION with li-ion technology to provide stationary energy storage solutions for a Canadian utility project supported by Sustainable Development Technology of Canada. The project will integrate Dow Kokam's battery cells with eCAMION's battery pack design to provide three lightweight, high-energy, 250 kilowatt-hour (kWh) systems that will be embedded at the community level. The energy system will be tested with a large urban Ontario distribution company.

Source: *Dow Kokam*

The Car Charging Group has signed a deal with SJTS Developers to provide charging services at the Ramada Inn in Strasburg, Virginia. This deal marks is the company's first entry into the Virginia market and its first installation agreement in the hospitality industry. Car Charging Group is forecasting nearly 1 million stations in the U.S. by 2015 -- including units from all makers. The company will install Level II ChargePoint® Networked Charging Stations manufactured by Coulomb Technologies.

Source: *Car Charging Group*

International Battery has been selected by Sunverge Energy to provide an 8.2 kilowatt-hour (kWh) lithium-ion (li-ion) battery to be used as the energy storage component of Sunverge's Solar Integration System (SIS). The integrated distributed energy system will provide a turnkey solar solution to support a 'Net-Zero Home Energy' demonstration at the Philadelphia Navy Yard's Clean Energy Innovation Hub. The Energy Innovation Hub will include a live demonstration of a microgrid with a 2700 square foot net-zero energy home.

Source: *International Battery*

Coulomb Technologies announced new features for its ChargePoint smart phone apps for the Blackberry and iPhone. The iPhone and Blackberry app stores, the ChargePoint® App (available for free in the iPhone and Blackberry app stores) is the only app available that provides EV drivers real-time charging station status. The new version allows drivers to search and filter for charging stations by status:

available, in use, voltage level, and paid or free stations.

Source: Coulomb Technologies

The city of Tavares, Florida has installed four charging stations. The U.S. Department of Energy paid \$34,000 for the stations and taxpayers will pay for the power over the next 6 months. City leaders will wait for the bill before deciding whether to 'charge for a charge.

Source: WFTV Orlando

The Washington Senate approved a bill to impose a \$100 annual fee on electric cars to make up for lost gas tax revenue. Drivers would pay the fee every year when they renew their EV registration under the bill. The Washington State Department of Transportation estimates that drivers with gasoline-powered vehicles pay about \$200 a year in gas tax. The state gas tax is 37.5 cents per gallon. The bill now moves to the House for approval.

Source: The Seattle Times

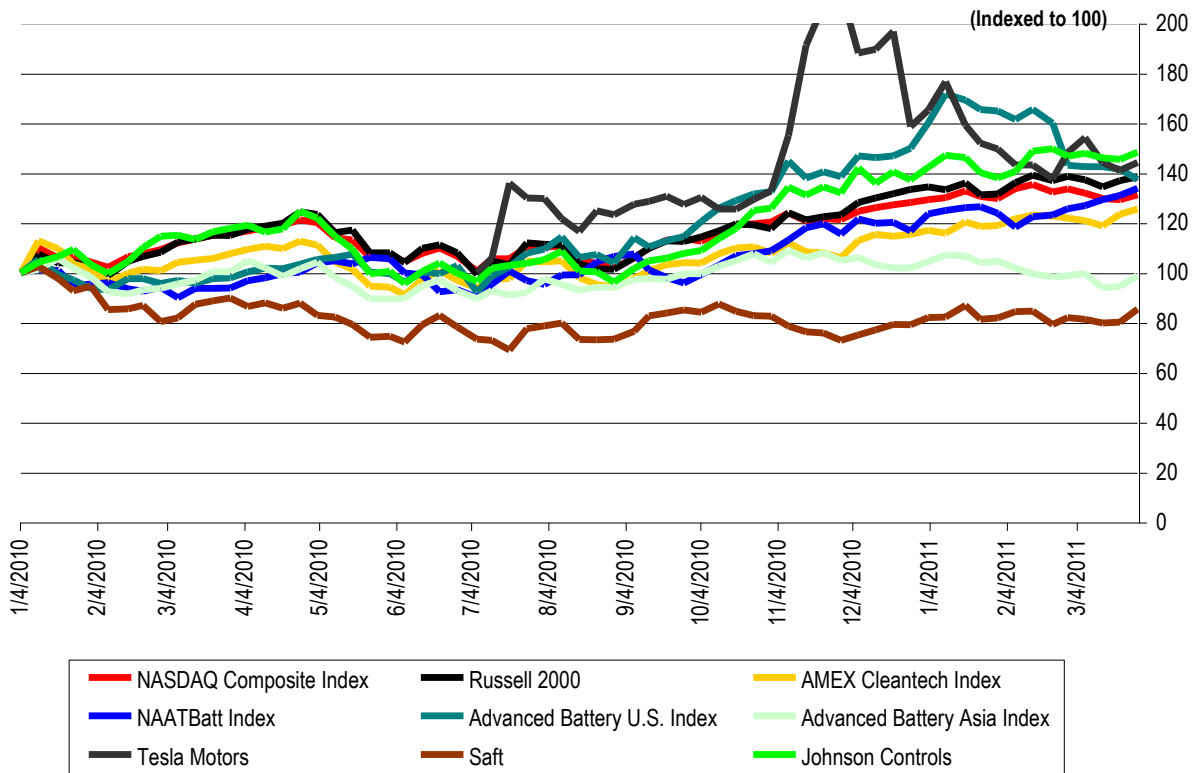
The United Illuminating Company has installed its first residential EV charging station in Easton, Pennsylvania. The company is testing and monitoring the new technology to determine how well it works for EV drivers. The charging station owner is driving a Chevy Volt and hasn't used any gas so far during a daily 24-mile commute—equating to about \$0.07 per mile.

Source: The Republic

A consortium led by Delta Electronics stated plans to spend NT\$1 billion (US\$34 million) on research and development to produce Taiwan's first extended-range electric buses by 1H13. Delta has expanded into the EV market and with its partners is intending to manufacture extended-range power systems next year, followed by the mass production of EVs by 2013. Delta's collaborators include the Industrial Technology Research Institute and the government-funded Automotive Research and Testing Center. If the consortium's buses were to commence commercial operation in 2013, by 2015 they could constitute 15% of the 2,200 buses produced annually in Taiwan.

Source: Taipei Times

Exhibit 3: Indices Performance
(From January 4, 2010)

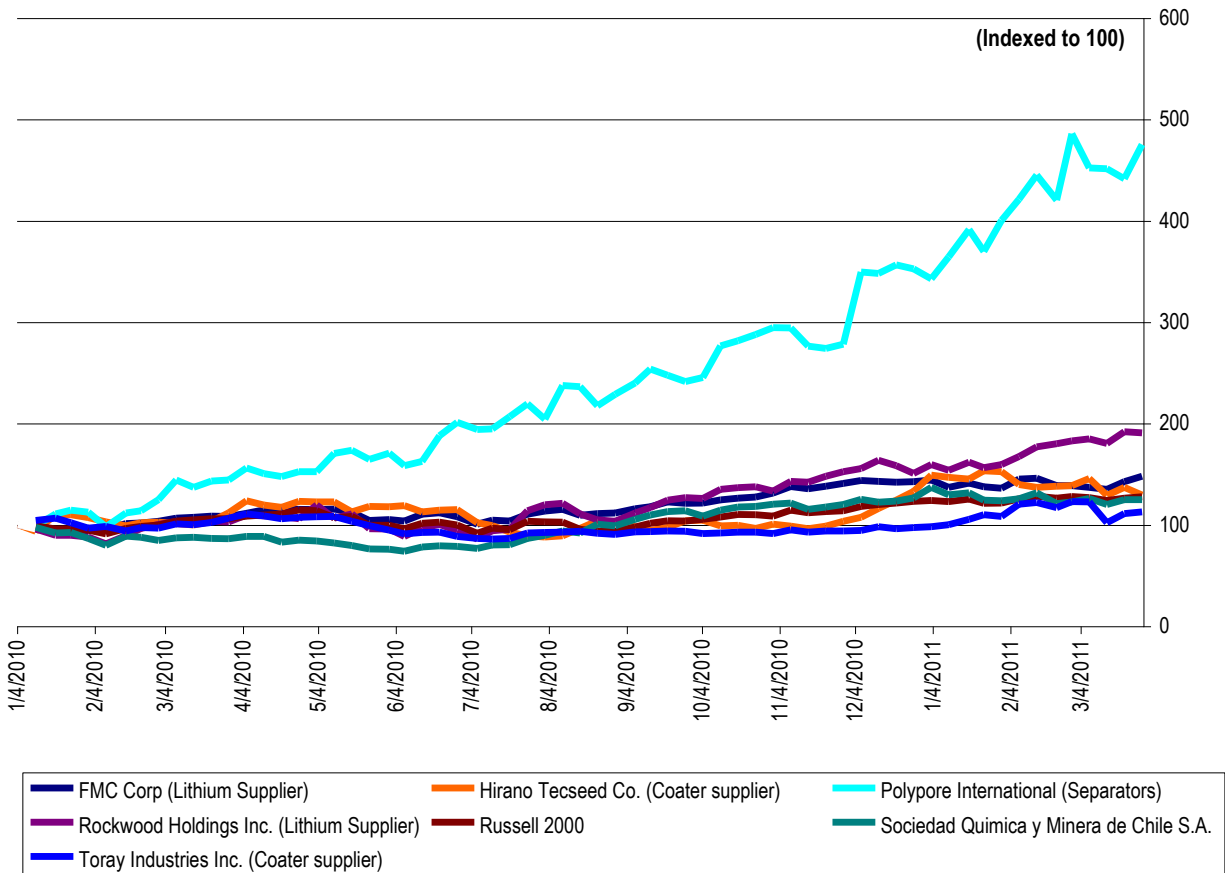


| Index | Close on 3/28/2011 | 52-Wk High | % of 52-Wk High | Performance | | |
|----------------------|-----------------------|---------------|--------------------|-------------|------|------|
| | | | | LTM | YTD | Week |
| Dow | 12,197.9 | 12,418.0 | 98.2% | 12.4% | 4.5% | 1.3% |
| S&P 500 | 1,310.2 | 1,344.1 | 97.5% | 12.2% | 3.0% | 0.9% |
| NASDAQ | 2,730.7 | 2,840.5 | 96.1% | 13.6% | 1.5% | 1.4% |
| Russell 2000 | 821.6 | 838.0 | 98.0% | 21.0% | 2.9% | 1.1% |
| AMEX Cleantech Index | 1,231.5 | 1,236.8 | 99.6% | 17.5% | 7.2% | 1.7% |

Source: Bloomberg and ThomsonOne

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

**Exhibit 4: Supplier Performance
(From January 4, 2010)**



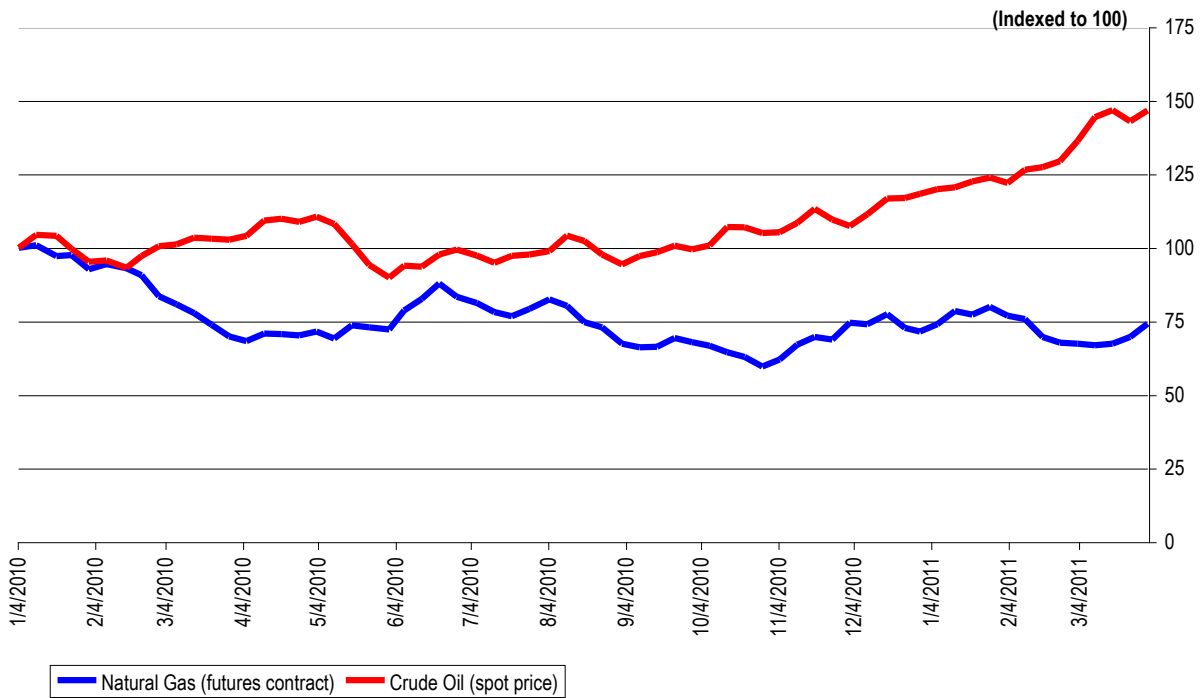
Source: Bloomberg

Exhibit 5: Commodity Prices

| Commodity | Price on 3/28/2011 | Price on 3/21/2011 | Price on 2/28/2011 | 1 Week Change | 1 Month Change |
|---------------------------------|--------------------|--------------------|--------------------|---------------|----------------|
| LME Copper (Cash, \$ per tonne) | 9,545 | 9,518 | 9,857 | 0.3% | (3.2%) |
| LME Lead (cash, \$ per tonne) | 2,678 | 2,712 | 2,533 | (1.3%) | 5.7% |
| LME Nickel (cash, \$ per tonne) | 26,575 | 26,760 | 28,830 | (0.7%) | (7.8%) |

Source: LME

**Exhibit 6: Natural Gas and Crude Oil
(From January 4, 2010)**



Source: EIA

Executive Director's Notes



ELECTRIFY, BABY, ELECTRIFY

Last Wednesday, in an address at Georgetown University, President Obama set a goal of reducing foreign imports of oil by one-third by 2025. In so doing the President highlighted the patently unsustainable fact that the United States accounts for 25% of the world's petroleum consumption but holds only 2% of the world's reserves. He called for increases in domestic oil production, a continued commitment to nuclear energy, increased production of advanced biofuels, tighter CAFE standards and continued development of hybrid and electric vehicles.

While it is good to hear the President talk about the need to reduce petroleum imports, and many of his ideas are sound, the background of the Georgetown address is more sobering. What motivated the speech was not the 25%-2% problem the President mentioned, but rising gasoline prices in the United States and the efforts of the President's political opponents to make political hay out of them, particularly in the context of domestic oil production. While the President talked about a wide range of policy initiatives, his address centered primarily on what seems to be the new *cause celebre* of energy policy: increasing domestic production of petroleum.

To state the obvious: increasing domestic production of petroleum will do nothing to improve the long-term energy security of the United States. While more domestic drilling will generate some additional employment and should in the short term improve the balance of trade, it will do nothing to decrease the price of petroleum. Petroleum is an international commodity whose price is in large part set by the countries that hold the 98% of the reserves the United States does not. Increasing domestic oil production may have some short term benefits, but reducing prices will not be one of them.

What was depressing about the Georgetown address is that it seems to indicate that government leaders are falling into a vicious political cycle we have seen before. In order to address that familiar third rail of American politics—high gasoline prices—leaders are competing with each other to advocate energy policies that sound logical but that are in reality pointless or worse. Accelerating the depletion of our small remaining petroleum reserves to chase illusory price reductions is nothing less than a fraud on the American people that will in the long run leave U.S. energy supplies less secure not more.

The key to long term U.S. energy security is to replace petroleum as the principal source of energy used for transportation with other forms of energy. Natural gas, nuclear, coal, solar, wind, hydro and geothermal generated energy all exist in relative domestic abundance. Transforming that energy into electrons and storing those electrons on vehicles is what vehicle electrification is all about. Replacing

petroleum with other forms of energy must be the central goal of U.S. energy policy, not just changing its source or even just using it more efficiently.

Using petroleum more efficiently in existing vehicles is an important goal and is the best way in to reduce petroleum use in short term. Technologies that increase the efficiency of gasoline powered vehicles, including hybrid technologies, should be robustly supported and quickly deployed. But it is important to remember that in the event of a major petroleum supply disruption, vehicles that get 50 mile per gallon of gasoline will be just as immobile as vehicles that get 15 miles per gallon. Enabling vehicles to access other more secure and more abundant forms of energy through electrification is the ultimate solution to the energy security problem. As politicians play their familiar smoke and mirrors games with the American public, it is critical that we keep this real, if more difficult and longer term, goal in mind.



James J. Greenberger
Executive Director

April 1, 2011



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.

North American Industry Announcements and Calendar

Get More Information! **NAATBatt Workshop on Problems in Utility Deployment of Distributed Energy Storage Systems:** On **April 21, 2010**, NAATBatt and the U.S. Department of Energy will co-host in Chicago an interactive workshop examining the issues, problems and challenges that electric utilities face in deploying distributed energy storage systems on the grid. Although DES systems have many benefits, profitably deploying DES systems and adding them to rate base continues to be a major challenge for utilities. The NAATBatt/DOE workshop will encourage utility and battery executives to sit together and have a frank discussion about those challenges and how they might be addressed. The workshop is by invitation only. For more information about the workshop, please click [here](#).

Save the Date! **NAATBatt 2011 Annual Meeting and Conference:** NAATBatt has announced that its 2011 Annual Meeting and Conference will be held on **September 7-9, 2011** in Louisville, Kentucky. The annual meeting will feature a Battery Industry-Academic Summit and a survey of the next five years of advanced battery technology development. More information about the 2011 conference will be posted soon on the NAATBatt Web site at: www.naatbatt.org. Visit the NAATBatt Web site for information about the 2010 conference. Please save the date for 2011!

Speaker Presentations from the NAATBatt 2010 Annual Meeting and Conference are Now 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 James 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.

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- **2011 Battery Conference:** The 2011 Battery Congress will be held at the University of Michigan – Michigan League in Ann Arbor, Michigan on **April 11-12, 2011**. Information about the Congress can be found at: <http://batterycongress.org/about-2/>

- **Electric Drive Vehicle Association 2011 Meeting and Annual Conference:** The EDVA 2011 Meeting and Annual Conference will be held on **April 19-21, 2011** in Washington, D.C. The Web site for the meeting can be viewed at: <http://www.edtaconference.org/ht/d/sp/i/18736/pid/18736>.
- **Workshop on Problems in Utility Deployment of Distributed Energy Storage Systems:** NAATBatt will sponsor a special workshop and roundtable discussion among utility and battery executives in Chicago on **April 21, 2011**. The purpose of the workshop is to identify the specific challenges that utilities face in evaluating, procuring, deploying and adding to their rate base advanced battery systems for storing electrical energy in the distribution portion of the grid. Attendance at the workshop is by invitation only. Please direct inquiries to: jgreenberger@naatbatt.org
- **The Council for Chemical Research Annual Meeting:** The Council for Chemical Research will hold its annual meeting on **May 1-3, 2011** in Dearborn, Michigan. The title of the meeting is "Advanced Materials: Driving Transformative Research in Transportation and Automobiles". The conference Web site may be viewed at: <http://www.ccrhq.org/2011-annual-meeting>.
- **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/>
- **21st Annual ESA Meeting:** The 21st annual meeting of the Electricity Storage Association will be held on **June 6-8, 2011** at the Fairmont Hotel in San Jose, California. Information about the meeting can be found on the meeting Web site at: http://www.electricitystorage.org/ESA/calendar/21st_esa_annual_meeting_-_save_the_date/.
- **4th Symposium on Beyond Lithium-Ion:** Beyond Lithium-Ion IV will be held **June 7-9, 2011**, at Pacific Northwest National Laboratory in Richland, Washington. The goal of the Symposium is to advance understanding on the directions and challenges in present-day vehicle batteries and the future of storage technologies. The meeting is one of a series of Symposia organized by a consortium of IBM Research and U.S. National Laboratories. The meeting website is <http://beyondli-ioniv.labworks.org/>.
- **Storage Week 2011:** Infocast will host Storage Week 2011 in San Diego on **July 11-14, 2011**. The program, now in its third year, will cover a range of storage policies, markets, project applications and technologies involved in the integration of storage onto the grid. NAATBatt is a Supporting Organization of the program and NAATBatt members will be entitled to a 15% discount on admission.
- **Plug-In 2011 Conference and Exhibition:** The Plug-In 2011 Conference and Exhibition will be held on **July 18-21, 2011** in Raleigh, North Carolina. The Conference Web site can be viewed at: <http://www.plugin2011.com/>.
- **NAATBatt 2011 Annual Meeting and Conference: September 7-9, 2011** in Louisville, Kentucky (see note above).
- **2nd Battery Safety Conference:** Knowledge Foundation will host the 2nd Battery Safety Conference on **November 7-8, 2011** in Boston, Massachusetts. 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

- **7th Lithium Mobile Power Conference:** Knowledge Foundation will host the 7th Lithium Mobile Power Conference on November 9-10, 2011 in Boston, Massachusetts 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.

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