

Summary:

For the February 4th issue of NAATBatt's Advanced Battery Weekly, we highlight the ongoing sector activities.

The NAATBatt, Advanced U.S. and Asia Indices were all relatively flat with changes of less than a percentage point. The S&P 500 and Russell 2000 were also flat.

Executive Director James Greenberger writes about the parallels between the events in Tahrir Square and Hurricane Katrina and their lessons for U.S. energy policy. Please read "**Tahrir Square and Katrina Syndrome**" in the Executive Directors Notes portion of this newsletter.

Key Highlights:

- **UQM Technologies** has been selected by **Saab** to power its all-electric Saab 9-3 ePower development test fleet. Initial deliveries began in 3Q10 and will continue through CY 2011. The 35.5 kilowatt-hour (kWh) lithium-ion (li-ion) pack is being supplied by **Boston-Power**.
- **BMW** and **PSA Peugeot Citroen** have created a joint venture (JV) to in an effort to leverage economies-of-scale for parts used in electric vehicles (EVs). The JV called "**BMW Peugeot Citroen Electrification**" is projected to launch operations in 2Q11 and begin equipping their vehicles from 2014.
- **Tesla Motors** has begun planning for an sport-utility vehicle (SUV) that will be called **Model X** and come to market in 2014. The EV will be the size of a small SUV, but will offer a much larger interior because the electric drive train and components will take up less space than a conventional gasoline engine and transmission.
- **Dominion Virginia Power** has proposed pilot program for EV charging that would use reduced rates to encourage customers to charge at night when energy demand is lower. The pilot would be available to customers within 90 days after SCC approval, and it would end Nov. 30, 2014.
- **Milbank Manufacturing** has selected **AeroVironment (AV)** to provide charging stations to its customers through its nationwide distribution network. AV's smart charging station is compatible with the smart grid and capable of interacting with utilities to help manage the potential impact of EVs on the electric grid.
- **ECotality** has completed development for integrating the **Blink Network** charger interface with the **Cisco® Home Energy Management Solution (HEMS)**. Cisco's HEMS technology will be deployed as part of The EV Project, the largest rollout of EV infrastructure to date, of which ECotality is the project manager.
- A pair of CNG-electric hybrid buses (ebuses) has been put into operation in the **City of Mumbai**. **Tata Motors** manufactured the ebuses that can run for 300 km (or 186 miles) at a stretch and also have an intelligent engine that switches from CNG to battery.
- The **Bay Area Quality Management District** awarded \$3.9 million to four companies to install charging stations in homes and public places. **Ecotality** received the largest amount followed by **Coulomb Technologies**, **AeroVironment** and **ClipperCreek**.

- The **California Independent System Operator** will seek more storage services from companies (such as batteries and flywheels) to provide reserve power for the grid. The ISO expects energy-storage companies to bid 5 MWs to 10 MWs into the California wholesale power market after federal regulators approve required tariff changes and after the ISO adjust its software.
- **Smith's Food and Drug Stores** has installed a charging station in **Utah**. The fuel center began operation this week and incorporates free, courtesy charging station for customers driving electric cars to "top off" their battery levels while they shop.

A Few More Details:

UQM Technologies has been selected by Saab to power its all-electric Saab 9-3 ePower development test fleet. Initial deliveries began in 3Q10 and will continue through CY 2011. The UQM PowerPhase 135 kilowatt (kW) electric propulsion systems will power the 70 Saab 9-3 ePower test fleet vehicles. The 35.5 kWh li-ion pack is being supplied by Boston-Power.

Source: UQM Technologies

BMW and PSA Peugeot Citroen have created a JV to in an effort to leverage economies-of-scale for parts used in EVs. The JV would develop and produce hybrid components for their own operations and to sell to other companies. The objective includes creating “an open European platform” for the components they produce, which will include battery packs, E-machines, generators, power electronics and chargers, as well as the software needed to run hybrid systems. The JV called “BMW Peugeot Citroen Electrification” is projected to launch operations in 2Q11 and begin equipping their vehicles from 2014.

Source: Financial Time

Tesla Motors has begun planning for an SUV that will be called Model X and come to market in 2014. The EV will be the size of a small SUV, but will offer a much larger interior because the electric drive train and components will take up less space than a conventional gasoline engine and transmission. The company continues to work on its Model S sedan that is scheduled to go into production in 2H12. Tesla plans to produce about 20,000 of the sedans annually.

Source: San Jose Mercury News

Dominion Virginia Power has proposed pilot program for EV charging that would use reduced rates to encourage customers to charge at night when energy demand is lower. The pilot would be available to customers within 90 days after SCC approval, and it would end Nov. 30, 2014.

Customers in the pilot project would pay as little as \$0.33 to charge an EV overnight with enough electricity for a typical 40-mile commute. Under the standard residential electric rate, the cost would cost upto \$0.86. The power company anticipates that more than 5,000 EV will be on the road in its service territory by 2013. The number could rise to over 86,000 (or 5% of all vehicle sales in the state) by 2020 -- enough demand for 250 megawatts (MW) of power.

Source: Richmond Times-Dispatch

Milbank Manufacturing has selected AeroVironment (AV) to provide charging stations to its customers (that includes utilities, developers, contractors, businesses, and consumers) through its nationwide distribution network. The partnership enhances Milbank’s PowerGen line of renewable power solutions. AV’s smart charging station is compatible with the Smart Grid and capable of interacting with utilities to help manage the potential impact of EVs on the electric grid.

Source: AeroVironment

ECotality has completed development for integrating the Blink Network charger interface with the Cisco® Home Energy Management Solution (HEMS). The Blink Network charger interface will now be accessible through the Cisco Home Energy Controller (HEC), where Blink EV Home Charging Station owners can access information about their EVs and optimize their charging and energy usage. Cisco’s HEMS technology will be deployed as part of The EV Project, the largest rollout of EV infrastructure to date, of which ECotality is the project manager.

Source: Ecotality

A pair of CNG-electric hybrid buses (ebuses) has been put into operation in the City of Mumbai. Tata Motors manufactured the ebuses that can run for 300 km (or 186 miles) at a stretch and also have an intelligent engine that switches from CNG to battery. The engine is 25 to 30% more fuel efficient than normal CNG buses.

Source: *The Times of India*.

The Bay Area Quality Management District awarded \$3.9 million to four companies to install charging stations in homes and public places. The funds will be primarily used to lower the cost of installing charging stations in the homes of electric car drivers, helping fund the installation of 2,750 chargers throughout the Bay area. Ecotality received \$2.9 million. Coulomb Technologies received \$350,000. The air district also gave \$500,000 to AeroVironment and \$175,000 to ClipperCreek.

Source: *San Francisco Chronicle*

The California Independent System Operator will seek more storage services from companies (such as batteries and flywheels) to provide reserve power for the grid. The organization views storage and demand response as "key components" that facilitate the addition of more wind and solar power facilities to California's electric grid. The ISO expects energy-storage companies to bid 5 MWs to 10 MWs into the California wholesale power market after federal regulators approve required tariff changes and after the ISO adjust its software.

Source: *WSJ*

Smith's Food and Drug Stores has installed a charging station in Utah, located in the parking lot (as shown in **Exhibit 1**) of the Smith's store at 876 S. 800 East in Salt Lake City. The fuel center began operation this week and incorporates free, courtesy charging station for customers driving electric cars to "top off" their battery levels while they shop. Smith's also installed equipment to allow for the future use of solar panels to power the fuel station as well as equipment required for the sale of natural gas.

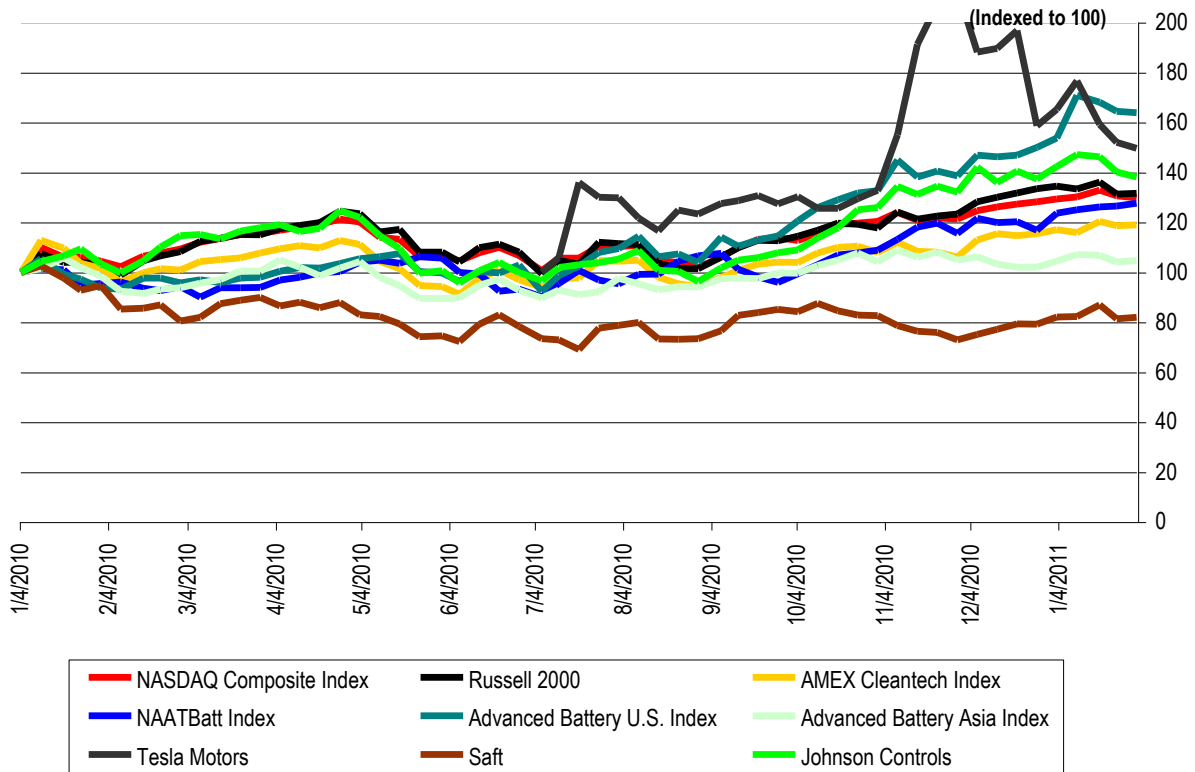
Source: *Deseret News*

Exhibit 1: Charge While You Shop



Source: *Smith's Food and Drug*

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

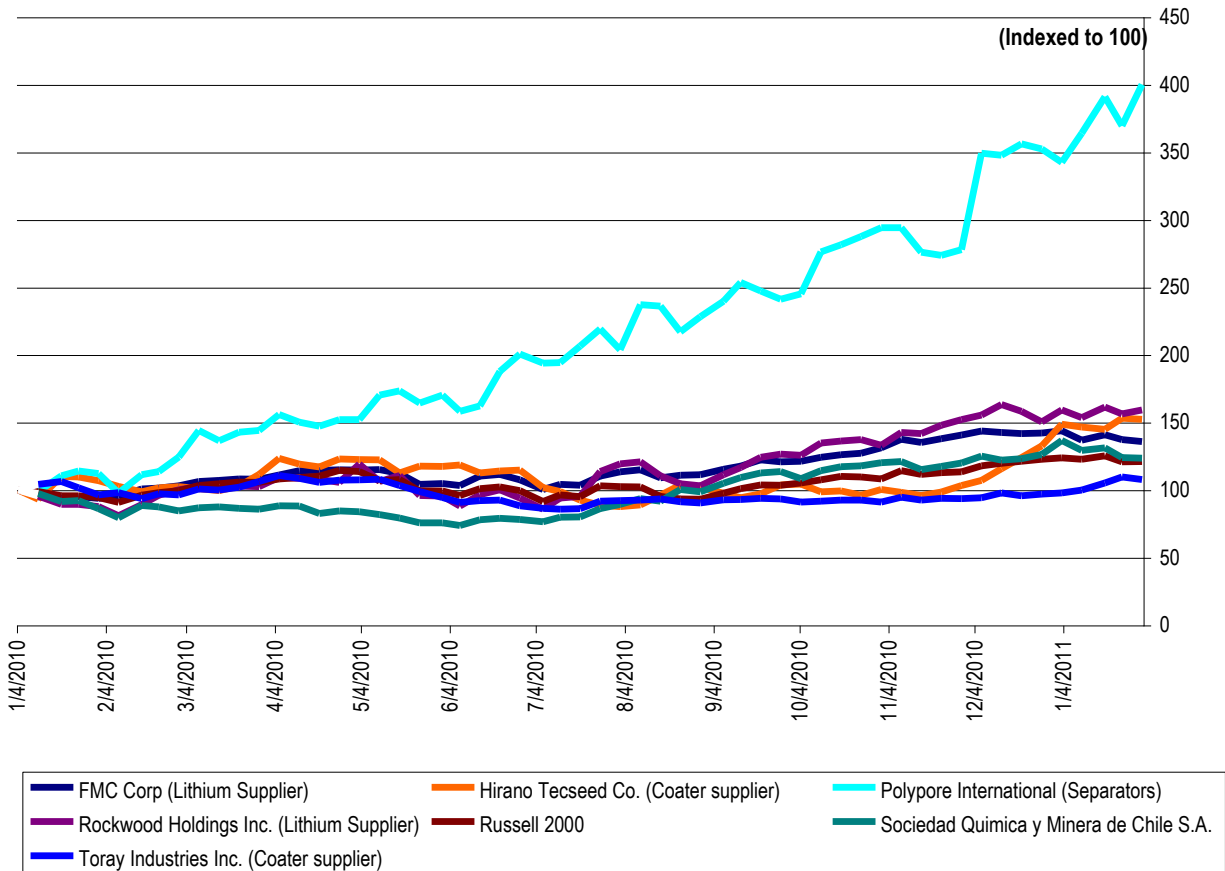


Index	Close on 1/31/2011	52-Wk High	% of 52-Wk High	Performance		
				LTM	YTD	Week
Dow	11,891.9	12,072.2	98.5%	18.1%	1.9%	(0.7%)
S&P 500	1,286.1	1,302.7	98.7%	19.8%	1.1%	(0.4%)
NASDAQ	2,700.1	2,766.2	97.6%	25.2%	0.3%	27.5%
Russell 2000	781.3	807.9	96.7%	29.7%	(2.2%)	0.3%
AMEX Cleantech Index	1,167.5	1,184.7	98.6%	18.7%	1.7%	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 3: Supplier Performance
(From January 4, 2010)



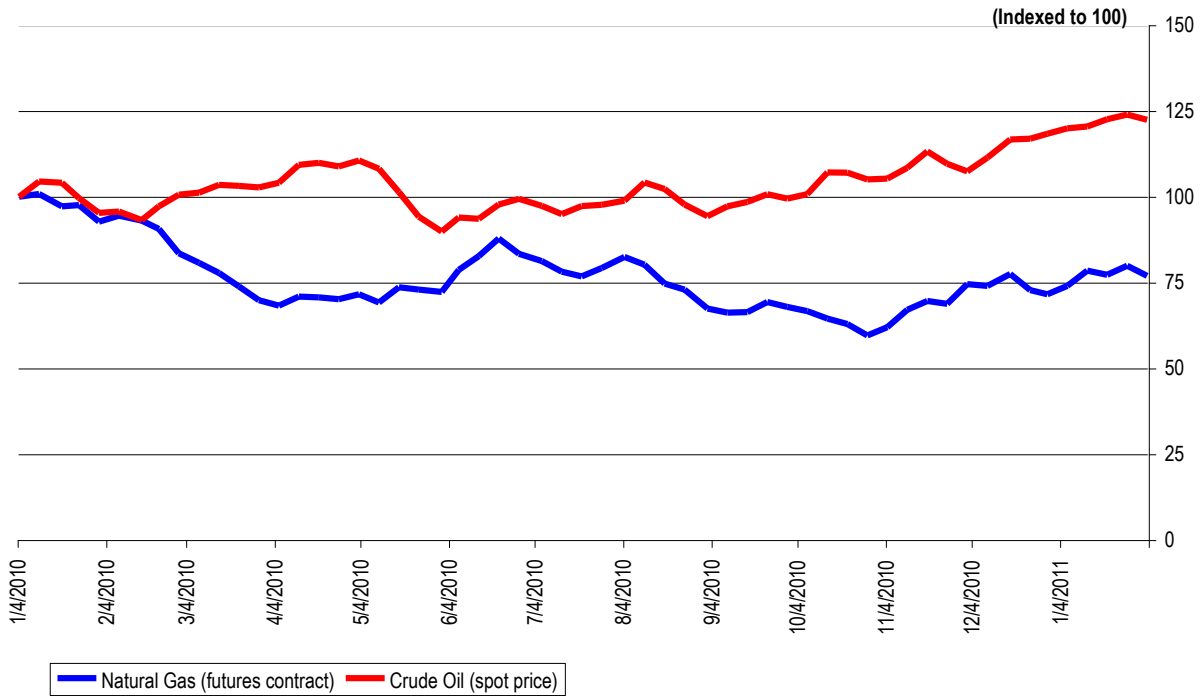
Source: Bloomberg

Exhibit 4: Commodity Prices

Commodity	Price on 1/31/2011	Price on 1/24/2011	Price on 12/31/2010	1 Week Change	1 Month Change
LME Copper (Cash, \$ per tonne)	9,715	9,509	9,739	2.2%	(0.2%)
LME Lead (cash, \$ per tonne)	2,575	2,485	2,585	3.6%	(0.4%)
LME Nickel (cash, \$ per tonne)	27,070	26,265	24,940	3.1%	8.5%

Source: LME

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



Source: EIA

Executive Director's Notes



TAHRIR SQUARE AND KATRINA SYNDROME

Samuel Johnson once observed that nothing concentrates the mind like a hanging. If Dr. Johnson were alive today he would undoubtedly add the corollary that nothing concentrates the mind on the tenuous nature of oil supplies like political turmoil in the Middle East.

It is still unclear how the events in Cairo and around the Arab world will resolve themselves. But the uncertainty concerns when those repressive, proud and impoverished societies will explode, not whether an explosion will eventually occur. When the explosion does come, in whatever form it takes, the steady supply of Mideast petroleum upon which so much of our economy depends will be in jeopardy. Consumers and businesses will face shortages of critical petroleum-based fuels and those shortages will occur suddenly and unpredictably. This is called an Oil Shock. And sooner or later a new Oil Shock is almost certain to occur.

The situation is not unlike New Orleans before Hurricane Katrina. That a major hurricane would eventually hit New Orleans was never in doubt. Yet for decades investment in dikes and pumps was deferred in favor of other budgetary and political priorities. Rather than investing to guard against a predictable catastrophic casualty event, the U.S. government chose to gamble—to gamble that the storm would not come this year. That propensity to gamble—Katrina Syndrome—proved to be a poor investment decision. In all about \$1-2 billion of investments deferred contributed substantially to an \$81.2 billion loss.

It is too soon to say whether the storm clouds gathering over Tahrir Square are headed this way or will veer to the left or to the right, as they have before. But those storm clouds remind us of the urgent need to invest in modernizing our electricity infrastructure and developing advanced battery technologies. Those technologies are the dikes and the pumps that will do much to keep the American economy above water when the next Oil Shock hits. We defer that investment at our peril.



James J. Greenberger
Executive Director

February 4, 2011





NAATBatt Membership Applications for 2011

2011 Membership Applications and Dues Structure

NAATBatt is now 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

**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. 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!

- **SAE 2011 Hybrid Vehicle Technologies Symposium + Electric Vehicle Technologies Day.** The SAE 2011 Hybrid Vehicle Technologies Symposium and Electric Vehicle Symposium will be held on **February 9-11, 2011** in Anaheim, California. The Symposium will address the latest technical innovation in electric drives, motors, energy storage, and system engineering from the innovators of hybrid and electric vehicle technology. The Web site for the event can be found at: <http://www.sae.org/events/training/symposia/hybrid/>.
- **ARPA-E Energy Innovation Summit:** The ARPA-E Energy Innovation Summit will be held on **February 28-March 2, 2010**, at the Gaylord National Resort & Convention Center in National Harbor, MD. The Summit will showcase the next generation of clean energy technologies and discuss the activities of the DOE's ARPA-E program. The Web site for the Summit may be viewed at: <http://www.ct-si.org/events/EnergyInnovation/about/>
- **Midwest Energy Forum:** The Midwest Energy Forum will be held at the University of Chicago Booth School of Business' Gleacher Center in downtown Chicago on **March 3, 2011**. The conference will highlight new energy technologies being developed in the Midwest region, including transportation-related technologies. The conference Web site can be found at: <http://www.chicagobooth.edu/mef/2011/>.
- **Cleantech Forum San Francisco:** Cleantech Forum San Francisco will be held on **March 14-16, 2011** at the Hyatt Regency San Francisco. The latest in the Cleantech Network's ongoing series of cleantech conferences, the Forum will focus on the growing role of information technology in the cleantech sector. The Forum's web site can be found at: <http://events.cleantech.com/sanfrancisco/event-overview>.
- **Advanced The 28th International Battery Seminar & Exhibit:** Power Source's annual International Battery Seminar & Exhibit will be held on **March 14-17, 2010**, at the Broward County Convention Center in Fort Lauderdale, Florida. A link to the conference Web site can be found at: <https://powersources.net/florida/28th.html>.
- **TREM11: Strategic Metals for National Security and Clean Energy:** The TREM11 conference on rare earth and strategic metals will be held on **March 22-23, 2010** at the Ritz-Carlton Pentagon City, in Arlington, Virginia. NAATBatt is a supporting organization of the conference. Information about the conference can be found at: <http://www.tremcenter.org/>.
- **4th Annual Energy Storage Summit:** The 4th Annual Energy Storage Summit will be on **March 28-30, 2011** in San Francisco, California. The Summit will focus on grid-connected energy storage technologies. The Summit's Web site can be found at: <http://www.energystoragesummit.com/Event.aspx?id=434682>.

- **Plug-In Electric Vehicle Infrastructure USA 2011:** The Plug-In Electric Vehicle Infrastructure USA 2011 conference will examine five key areas of interest to those working with PEV's and their supporting infrastructure. The conference will be held **March 31-April 1, 2011**, at the Hilton Mission Bay in San Diego California. The conference Web site is: <http://www.evupdate.com/electricvehicleusa/index.shtml>.
- **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/.
- **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 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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