

## Summary:

For the November 26<sup>th</sup> issue of NAATBatt's Advanced Battery Weekly, we highlight the ongoing sector activities.

**ONLY 11 DAYS TO GO** until the **NAATBatt 2010 Annual Meeting and Conference** on "The Impact of PEV's on T&D Systems: Challenges and Solutions". The conference, which will be held at The Seelbach Hilton Hotel in Louisville, Kentucky on **December 8-10, 2010**, will focus on the impact of plug-in electric vehicle (PEV) recharging on local electric distribution and transmission systems. The conference will bring together utilities, utility regulators, auto makers and battery manufacturers for the first comprehensive, cross-industry discussion about how the grid can best handle the advent of mass-market PEV's. Both the technical and policy implications of integrating PEV's with the grid will be discussed. For more information and to register, click on: <http://naatbatt.org/2010annualmeeting/>.

Executive Director James Greenberger suggests looking to state utility commissions for thought leadership on national energy policy over the next few years in "**Thought Leadership in a Time of Partisan Deadlock**". Mr. Greenberger's commentary can be read in the Executive Director's Notes section of this newsletter below.

The NAATBatt, U.S. and Asia Indices increased 1.3%, 1.8% and 2.1%, respectively. The S&P 500 and Russell 2000 were both relatively flat.

## Key Highlights:

- The Korean government and industry officials have met with the **Office of Information and Regulatory Affairs** to protest the **U.S. Government's** plan to impose stricter regulations on air shipments of li-ion batteries. Over the next few months, the U.S. is planning to reclassify batteries with capacities over 3.6 watt-hours as dangerous.
- **Valence Technology** announced the **Mercedes Electric Vito** (eVito) Taxi was awarded Most Economic & Environment Friendly Multi-Purpose Electric Vehicle at the **Royal Automobile Club's (RAC) Future Car Challenge**. The eVito was developed by a consortium comprising of Valence, **Mercedes Benz** and **Zytek Automotive**.
- **Advanced Micro Devices** has installed 3 EV charging stations at its office campus in **Southwest Austin**. The stations are from **Coulomb Technologies** and cost a total of \$31,000 to install.
- **Toyota Motor** will begin mass production of lithium-ion (li-ion) batteries for its electric vehicles (EVs) that are scheduled to reach the market in 2012. The company is planning to introduce plug-in hybrids in **Japan, Europe** and the **U.S.** with plans to sell 50,000 EVs annually.
- Despite the pushout of the **Coda** sedan consumer launch until 4Q11, the EV will be available for rent from **Hertz** (in addition to **Enterprise**). Hertz plans to roll out its EV rental program to consumers in the United States and overseas from the start of 2011.
- **Public Service Company of New Mexico (PNM)** is teaming up with scientists to develop a way to manage solar energy so it can be accessed when needed. The utility has been awarded over \$2 million by the **U.S. Department of Energy** for the project.

- The **Department of Science and Industrial Policy (DSIP)** has indicated that the first electric buses (ebus) may appear in the streets of **Moscow** in 2 years. The DSIP is jointly developing e buses with the **Ministry of Industry** and **Ministry of Education**.
- The **City of Raleigh** introduced two charging stations. The EV stations were donated by **Eaton Corporation**—saving the city \$3,000 per station. The plan is for Raleigh to have at least 30 stations by September 2011.
- Proton Holdings Bhd is in discussions with the Malaysian Government and highway operator PLUS Expressway Bhd to potentially setup charging stations in the country. The company plans to launch the Exora EV in 2011.

## A Few More Details:

The Korean government and industry officials have met with the Office of Information and Regulatory Affairs to protest the U.S. Government's plan to impose stricter regulations on air shipments of li-ion batteries. In January, the U.S. Department of Transportation announced plans to tighten regulations on air shipments used in various IT devices such as laptops and cell phones, by limiting the number and weight of batteries shipped in each package. Batteries with a capacity of less than 100 watt-hours (Wh) are classified nonhazardous and are sent via normal cargo. If in excess of 100 Wh, the material is categorized as dangerous forcing manufacturers to obtain special packaging. Over the next few months, the U.S. is planning to reclassify batteries with capacities over 3.6 watt-hours as dangerous.

*Source: JoongAng Daily*

Valence Technology announced the Mercedes Electric Vito (eVito) Taxi (as shown in **Exhibit 1**) was awarded Most Economic & Environment Friendly Multi-Purpose Electric Vehicle at the Royal Automobile Club's (RAC) Future Car Challenge. The seven-seat EV is powered by Valence batteries. The taxi was developed by a consortium comprising of Mercedes Benz (UK), ZYTEK Automotive, and Valence.

*Source: Valence Technology*

### Exhibit 1: The Mercedes eVito taxi



*Source: Business Wire*

Advanced Micro Devices has installed 3 EV charging stations at its office campus in Southwest Austin. The stations are from Coulomb Technologies and cost a total of \$31,000 to install. However, there is a 50% federal tax credit that applies. The stations will be available only to employees. The company will pay for the electricity cost.

Source: *American-Statesman*

Toyota Motor will begin mass production of lithium-ion (li-ion) batteries for its electric vehicles (EVs) that are scheduled to reach the market in 2012. The batteries will be made at a venture with Panasonic Corp. in Shizuoka Prefecture, central Japan (per NHK). The company is planning to introduce plug-in hybrids in Japan, Europe and the U.S. with plans to sell 50,000 EVs annually.

Source: *Bloomberg*

Despite the pushout of the Coda sedan consumer launch until 4Q11, the EV will be available for rent from Hertz (in addition to Enterprise). Hertz plans to roll out its EV rental program to consumers in the United States and overseas from the start of 2011. The company expects the vehicle to have 40% more usable energy than its competitors and a range of up to 120 miles.

Source: *The Independent*

Public Service Company of New Mexico (PNM) is teaming up with scientists to develop a way to manage solar energy so it can be accessed when needed. The utility has been awarded over \$2 million by the U.S. Department of Energy for the project. As part of the Prosperity Energy Storage project, PNM is installing a 500-kilowatt (kW) solar photovoltaic panel system in Albuquerque. The solar array will be connected to a battery system about the size of 8 shipping containers.

Source: *Associated Press*

The Department of Science and Industrial Policy (DSIP) has indicated that the first electric buses (ebus) may appear in the streets of Moscow in 2 years. The DSIP is jointly developing ebuses with the Ministry of Industry and Ministry of Education. The goal is to create seven models of ebuses in 2011. The small type of electric bus (as shown in **Exhibit 2**) can accommodate about 30 seats and would operate on battery power.

### Exhibit 2: A Prototype Electric Bus



Source: *BCM*

The City of Raleigh introduced two charging stations. The EV stations were donated by Eaton Corporation—saving the city \$3,000 per station. The plan is for Raleigh to have at least 30 stations by September 2011. Those will be part of a bigger wave that will bring more than 350 recharging stations to North Carolina, most of them financed by federal stimulus money.

Source: *News Observer*

Proton Holdings Bhd is in discussions with the government of Malaysia and highway operator PLUS Expressway Bhd to potentially setup charging stations in the country. The company plans to launch the Exora EV (as shown in **Exhibit 3**) in 2011. Like the Volt, the engine will be electric-powered with a petrol-powered motor to charge the battery. The vehicle is expected to operate in battery mode-only for about 140 kilometers (or 87 miles). The motor, its mileage can increase to over 500km (or 310 miles).

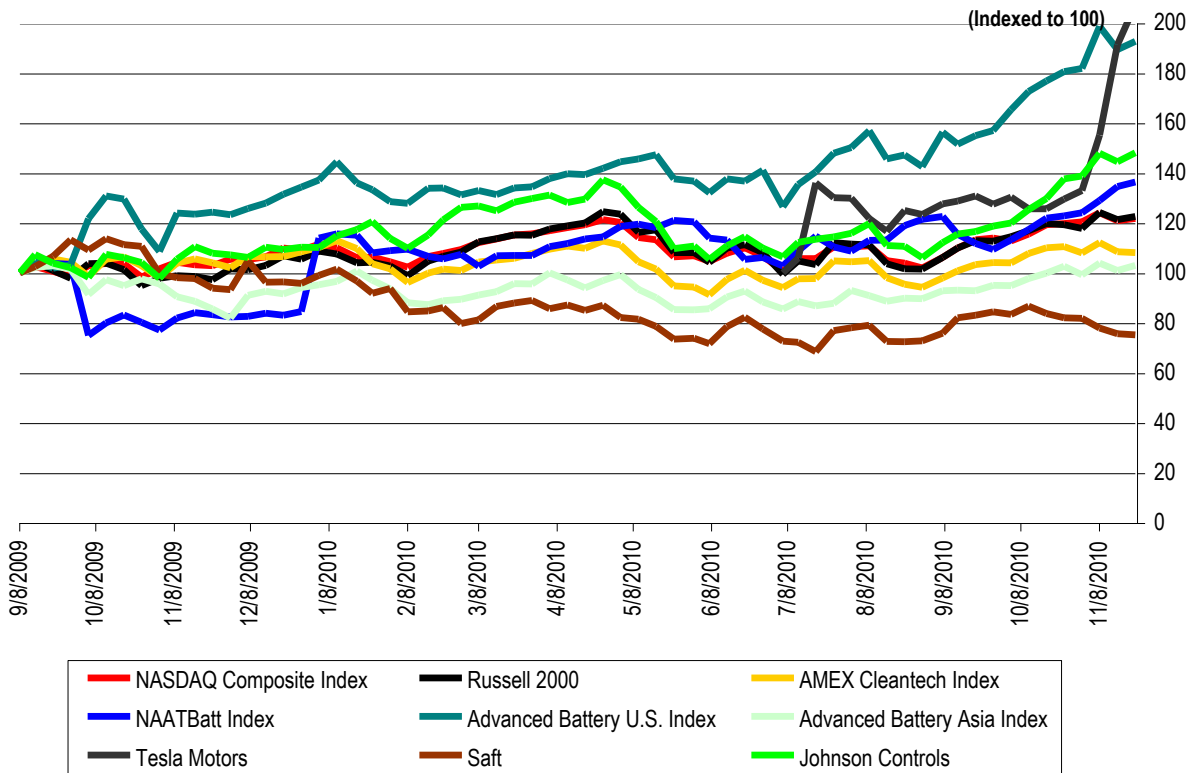
*Source: Business Times*

### **Exhibit 3: The Proton Exora**



*Source: Car Advice*

**Exhibit 4: Indices Performance  
(From September 8, 2009)**

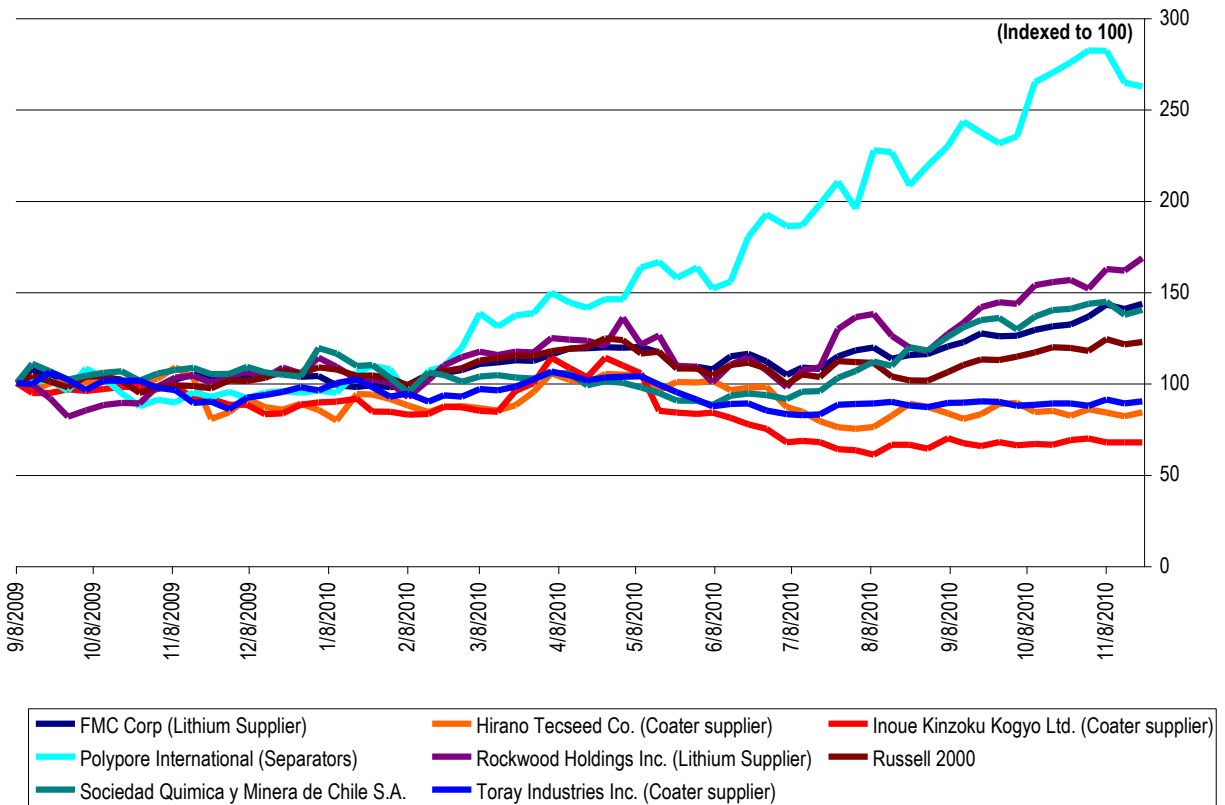


Index	Close on 11/22/2010	52-Wk High	% of 52-Wk High	Performance		
				LTM	YTD	Week
Dow	11,178.6	11,505.8	97.2%	8.3%	7.2%	(0.2%)
S&P 500	1,197.8	1,227.1	97.6%	9.4%	7.3%	0.0%
NASDAQ	2,532.0	2,592.9	97.7%	16.7%	10.4%	0.7%
Russell 2000	727.3	746.0	97.5%	23.4%	15.8%	1.0%
AMEX Cleantech Index	1,059.4	1,112.5	95.2%	4.7%	(0.7%)	(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 5: Supplier Performance**  
(From September 8, 2009)



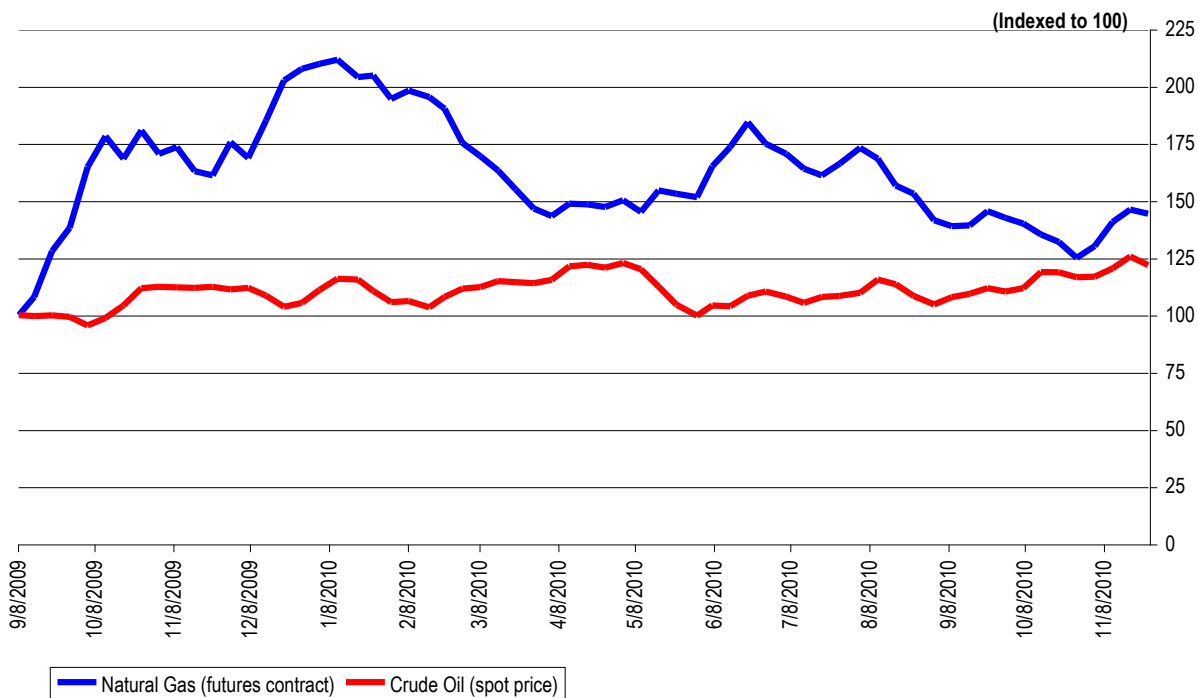
Source: Bloomberg

**Exhibit 6: Commodity Prices**

Commodity	Price on 11/22/2010	Price on 11/16/2010	Price on 10/22/2010	1 Week Change	1 Month Change
LME Nickel (Cash, \$ per tonne)	21,610	22,190	23,400	(2.6%)	(7.6%)
LME Lead (cash, \$ per tonne)	2,226	2,383	2,492	(6.6%)	(10.7%)

Source: LME

**Exhibit 7: Natural Gas and Crude Oil**  
**(From September 8, 2009)**



Source: EIA

## Executive Director's Notes



### **THOUGHT LEADERSHIP IN A TIME OF PARTISAN DEADLOCK**

As I have noted in earlier newsletters, the prospects for making serious progress in Washington on a national energy policy over the next few years look bleak. A very slowly recovering job market, continuing budget crisis and divided Congress seem destined to ensure that energy policy over the next few years will consist of little more than a series of partisan sound bites and acrimonious debate over the mere existence of global warming.

That deadlock will, of course, be a tragedy. Worldwide petroleum reserves are more concentrated today than they were two years ago and concentrations of CO<sup>2</sup> in the atmosphere have grown greater, not smaller, over the same period. The threats to national energy security and the environment that motivated unprecedented interest in advanced energy technologies two years ago have not taken a holiday on account of the recession or mid-term elections. The locomotive is still running away, and we are two years closer to the end of the track.

With the prospect of leadership in Washington looking bleak, the unlikely saviors of national energy security may be state officials. Ignored and derided for years by Washington policymakers as unsophisticated, local fiefdoms, the state public utility commissions that approve and oversee the vast majority of national electricity infrastructure investment suddenly find themselves at the precise nexus of national energy policy needs and the emerging energy technologies that can address them.

It is essential that over the next few years the advanced battery industry and the developers of other advanced energy technologies engage with state public utility commissions as never before. The PUC commissioners who are charged with responsibility for protecting the public interest in electricity investment may well become the most important thought leaders on issues of national energy security. There have been glimmers of this happening in California for a while. With Washington, perhaps, shut down for the next two years, those glimmers may spread to the rest of the nation. Those glimmers need to be encouraged.



James J. Greenberger  
Executive Director

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## NAATBatt Board Approves New Member Incentives 2011 Membership Drive Underway

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### **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

**ONLY  
TWO  
WEEKS TO  
GO!**

**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. 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.

- **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/>
- **10x Advanced Battery R&D:** 10X Advanced Battery R&D: Breaking Barriers in Advanced Battery Performance & Value will be held at the Techmart Meeting Center in Santa Clara, California on **January 10-12, 2011**. The conference will survey technology advances in battery chemistries, ultracapacitors, fuel cells and other technologies that could dramatically reduce the costs of energy storage within a 3-10 year time frame. The conference Web site is: <http://www.infocastinc.com/index.php/conference/414>. NAATBatt is a supporting organization.
- **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 produced 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>.
- **Advanced The 28<sup>th</sup> 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>.

- **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/>
- **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/>
- **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](http://www.batteriesdatabase.com), [www.sdle.co.il](http://www.sdle.co.il), or contact: [shmued33@gmail.com](mailto: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.epoverviews.com/>. If your company is interested in a subscription, please contact Jim Greenberger at [jgreenberger@naatbatt.org](mailto: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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