

## Summary:

For the August 13<sup>th</sup> issue of NAATBatt's Advanced Battery Weekly, we highlight the ongoing sector activities. On September 2<sup>nd</sup>, we will be hosting a webinar "Developments in Advanced Lead Acid Batteries: Everything You Thought You Knew But Don't".

The NAATBatt and U.S. Battery Indices increased 4.0% and 4.7%, respectively, while the Asia Battery declined 2.2%. The S&P 500 and Russell 2000 were relatively flat.

## Key Highlights:

- **Boston-Power** will be supplying lithium-ion (li-ion) batteries for use in **ASUS International** laptops. The '**Sonata Long Life Battery**' is expected to last 3x longer than a typical laptop battery pack.
- **A123 Systems** announced that **AES Energy Storage** ordered and is deploying 44 megawatts (MW) of **Smart Grid Stabilization Systems (SGSS)** for various new projects. The projects are scheduled to be completed by 2012.
- **Ford, Detroit Edison** and **Xtreme Power** are building a solar power generation system for electric vehicle (EV) charging stations. Xtreme Power is providing a 750-kw energy storage facility that can store 2 million watt-hours of energy using batteries – enough to power 100 average Michigan homes for a year.
- A study by **McKinsey** indicates the **United States** is the country most likely to lead the emergence of EVs as a means of mass transportation. The consultancy's EV Index places the U.S. ahead of **France, Germany** and other western European countries.
- **DTE Energy** is offering incentives to 2,500 early adopters in order to learn about EV owners' habits and how much of a burden the vehicles will be on the grid. DTE is offering volunteers a \$2,500 incentive toward a separate meter, which tracks only vehicle charging, and a high-voltage charger.
- **Bolivia** is seeking to procure a lithium development deal with **Korea**. About 40% of the world's lithium reserves are in Bolivia and countries including Korea, Brazil, France and Japan are facing off for the rights to develop the core element used in producing rechargeable batteries.
- **Remy International** announced it will be the exclusive provider of electric motors for **Advanced Mechanical Products (AMP)** EV conversion of the 2010 **Chevrolet Equinox**. The converted Equinox is likely the first-ever fully electric plug in sports utility vehicle or crossover that can be purchased in the United States.
- **Spain's** goal of having 2,000 EVs on the road by year-end is not likely to be achieved as only 16 cars have been sold. Spain's green agenda is targeting a million EVs on the roads by 2015.
- **Dan Public Transport** has won the **Ministry of Transport** tender to operate **Haifa's Metronit** electric bus system for 12 years. The company will procure 100 high-capacity articulated buses and begin operating the network within two years.
- **ISE Corporation** has filed Chapter 11. The announcement comes less than a month after the company announced layoffs, and six months after going public in Toronto.

## A Few More Details:

Boston-Power will be supplying lithium-ion (li-ion) batteries for use in ASUS International laptops. The batteries will be used to power ASUS' Series B line of notebooks. The 'Sonata Long Life Battery' is expected to last 3x longer than a typical laptop battery pack. Boston-Power's batteries are already used in Hewlett-Packard notebooks.

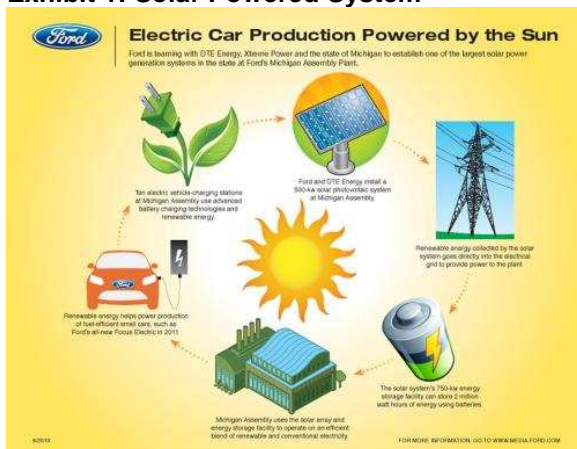
Source: *Boston-Power*

A123 Systems announced that AES Energy Storage ordered and is deploying 44MW of A123's Smart Grid Stabilization Systems (SGSS) for various new projects--including an energy storage project in Johnson City, New York. The projects are scheduled to be completed by the end of 2011. A123 and AES established a relationship in 2008 to develop and deploy energy storage systems to increase the capacity, improve responsiveness and enhance efficiency of assets on the electric grid.

Source: *A123 Systems*

Ford, Detroit Edison and Xtreme Power are building a solar power generation system (as shown in **Exhibit 1**) for EV charging stations. Ford and Detroit Edison will install a 500-kilowatt solar photovoltaic panel system at the Michigan Assembly Plant in Wayne, Michigan. The system will be integrated with a 750-kw energy storage facility from Extreme Power that can store 2 million watt-hours of energy using batteries – enough to power 100 average Michigan homes for a year.

### Exhibit 1: Solar Powered System



Source: *Ford Motor Company*

A study by McKinsey indicates the United States is the country most likely to lead the emergence of electric vehicles (EVs) as a means of mass transportation. The consultancy's EV Index places the U.S. ahead of France, Germany and other western European countries. China is tied with Germany in third place. The index incorporates 9 variables that are likely to influence investment in EV production and consumer acceptance of the new technology.

Source: *Financial Times*

DTE Energy is offering incentives to 2,500 early adopters in order to learn about EV owners' habits and how much of a burden the vehicles will be on the grid. DTE is offering volunteers a \$2,500 incentive toward a separate meter, which tracks only vehicle charging, and a high-voltage charger. As many as 250 people can choose from a monthly rate of \$40 to charge their EVs or a lower rate for charging during off-peak hours, between 11 p.m. and 9 a.m. DTE will be offering the incentives through 2012.

Source: *Detroit Free Press*

Bolivia is seeking to procure a lithium development deal with Korea. About 40% of the world's lithium reserves are in Bolivia and countries including Korea, Brazil, France and Japan are facing off for the rights to develop the core element used in producing rechargeable batteries. Korean companies such as LG Chem and Samsung SDI are among the leaders in the global production of rechargeable li-ion batteries.

Source: *The Chosum Ilbo*

Remy International announced it will be the exclusive provider of electric motors for Advanced Mechanical Products (AMP) EV conversion of the 2010 Chevrolet Equinox (as shown in **Exhibit 2**). The converted Equinox is likely the first-ever fully electric plug in sports utility vehicle or crossover that can be purchased in the United States. AMP is currently converting the Equinox as well as 2007 through 2009 Saturn Sky and Pontiac Solstice convertibles.

Source: *Remy International*

### Exhibit 2: The Chevrolet Equinox



Source: *Chevrolet*

Spain's goal of having 2,000 EVs on the road by year-end is not likely to be achieved as only 16 cars have been sold. Spain's green agenda is targeting a million EVs on the roads by 2015. The failed attempt to kick start Spain's EV market comes despite pledges of 80 million Euros (~\$103 million) of subsidies for those who buy by the end of next year – with the government funding 20% of the purchase, or up to 6,000 Euros,(or \$7,700) on each car.

Source: *Guardian*

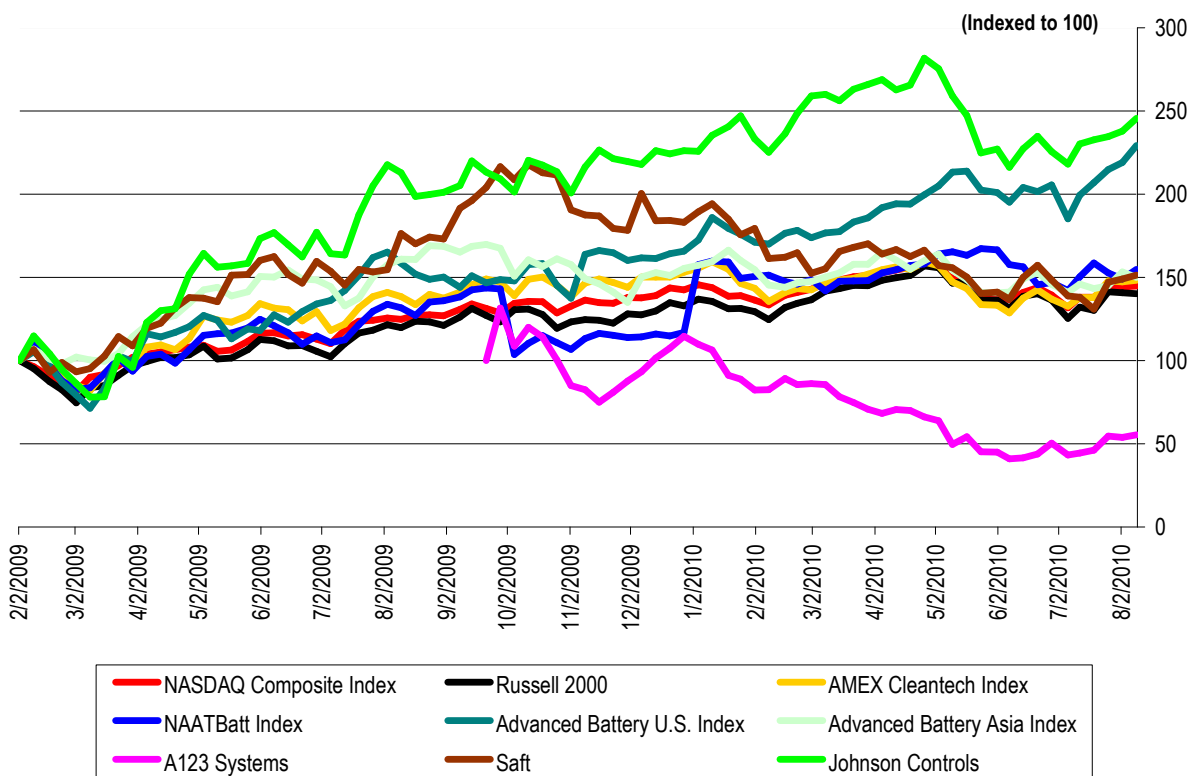
Dan Public Transport has won the Ministry of Transport tender to operate Haifa's Metronit electric bus system for 12 years. The company will procure 100 high-capacity articulated buses and begin operating the network within two years. Dan will use Man buses assembled by Ha'argaz Ltd. The company beat out bus operators Metropoline Transport and Kavim (a joint venture of Mayer Cars and Trucks and and Horn & Leibowitz). Egged Israel Transport Cooperative Society withdrew from the tender in the early stages. Haifa could be the first Israeli city to operate an advanced public transport system. The Metronit rapid transit system will cost an estimated NIS 1.3 billion (~\$342 million).

Source: *Globes*

ISE Corporation (a California corporation) has filed Chapter 11. The company will continue operating its business during the Chapter 11 restructuring process and is in discussions with lenders and strategic partners regarding a potential debtor-in-possession ("DIP") financing. The announcement comes less than a month after the company announced layoffs, and six months after going public in Toronto.

Source: *ISE Corporation*

**Exhibit 3: Indices Performance  
(From February 2, 2009)**

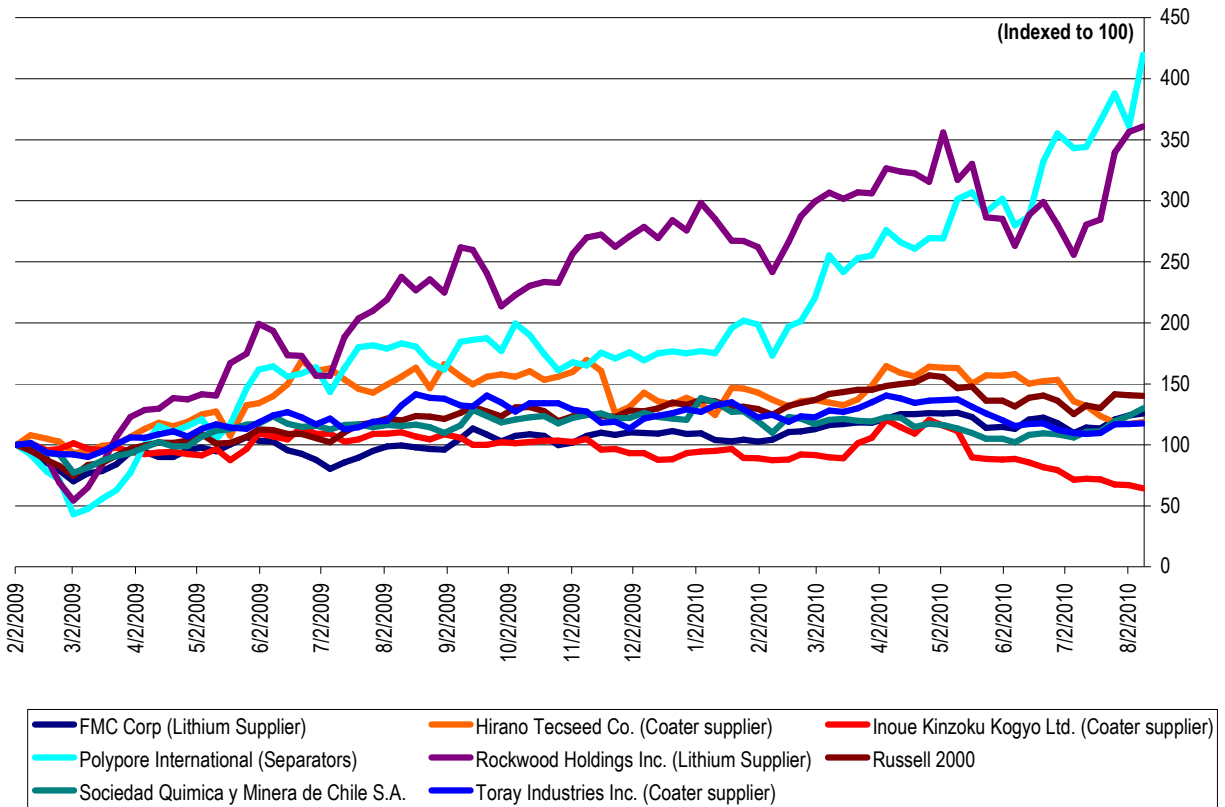


Index	Close on 8/9/2010	52-Wk High	% of 52-Wk High	Performance		
				LTM	YTD	Week
Dow	10,698.8	11,309.0	94.6%	14.2%	2.6%	0.2%
S&P 500	1,127.8	1,219.8	92.5%	11.8%	1.0%	0.2%
NASDAQ	2,305.7	2,535.3	90.9%	15.8%	0.5%	0.5%
Russell 2000	659.5	746.0	88.4%	15.6%	5.0%	(0.4%)
AMEX Cleantech Index	1,029.0	1,112.5	92.5%	6.7%	(3.6%)	0.5%

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 February 2, 2009)



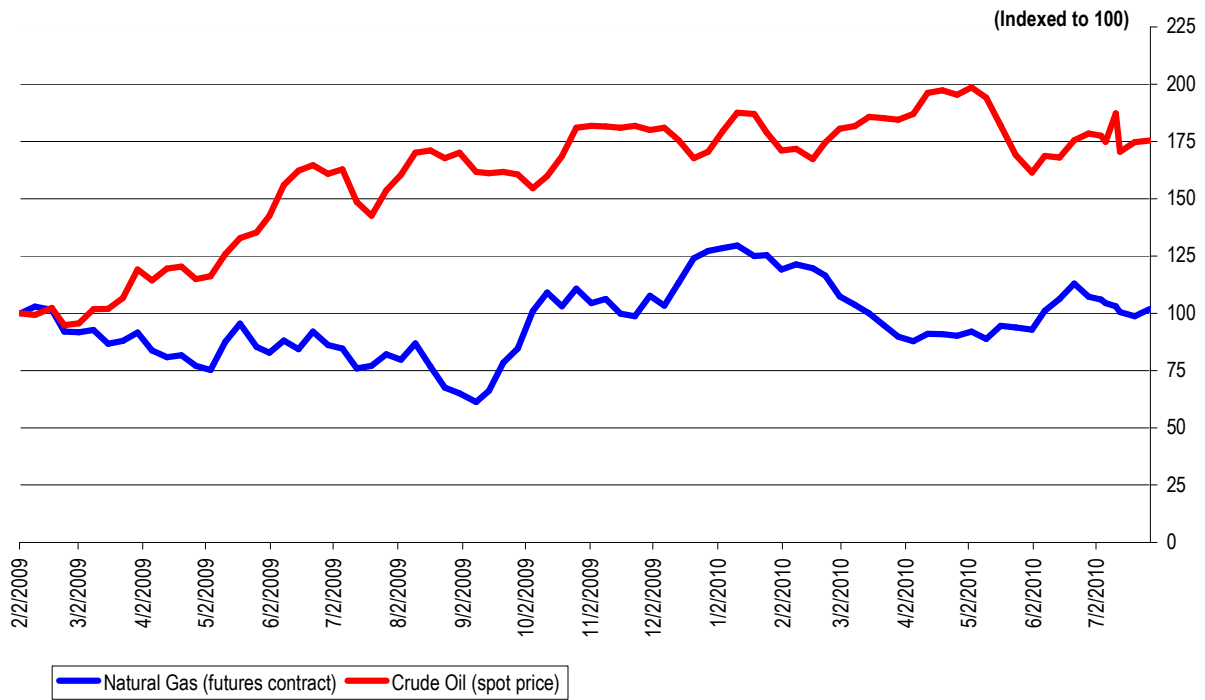
Source: Bloomberg

**Exhibit 5: Commodity Prices**

Commodity	Price on 8/9/2010	Price on 8/2/2010	Price on 7/9/2010	1 Week Change	1 Month Change
LME Nickel (Cash, \$ per tonne)	22,560	21,415	19,125	5.3%	18.0%
LME Lead (cash, \$ per tonne)	2,170	2,083	1,807	4.2%	20.1%

Source: LME

**Exhibit 6: Natural Gas and Crude Oil**  
 (From February 2, 2009)



Source: EIA

## Executive Director's Notes



### **NAATBATT FILES COMMENTS WITH FERC TO HIGHLIGHT THE OPPORTUNITIES AND CHALLENGES OF DISTRIBUTED ENERGY STORAGE TECHNOLOGY**

On Monday of this week, NAATBatt filed comments with the Federal Energy Regulatory Commission (FERC) in response for FERC's solicitation for guidance from industry on how to better regulate and administer grid-connected energy storage technology. This topic is of critical interest to the advanced battery industry as well as to automakers hoping to produce plug-in electric vehicles (PEV's) that will be acceptable to mass market consumers. It seems increasingly clear that one of the most effective ways of reducing the cost of PEV batteries, and therefore reducing the cost of PEV's so that many consumers will want to buy them, is by using the grid-connected stationary power market to increase advanced battery production volumes and to provide a secondary use for retired PEV batteries.

In our comments to FERC we asked for three things. First, we asked FERC to recognize that the only way that distributed energy storage—the type of storage most likely to use batteries that are compatible with PEV applications—can be commercially successful is if distributed storage facilities are permitted to recover multiple streams of revenue for the multiple functions that a single facility can perform on the grid. For example, a group of community energy storage (CES) units linked together by a single CES hub can provide local back-up power to a local community during peak times but also sell aggregated, multi-megawatt power into the wholesale market during non-peak times. The regulatory scheme for electricity sales in the United States does not currently contemplate or easily permit such multi-function sales.

Second, we called FERC's attention to an issue that has been the subject of this column in the past: The possible inability of distributed energy storage facilities to access FERC transmission incentive rates that are available, under FERC's *Western Grid Development* order, to larger, centralized bulk energy storage facilities, such as NaS battery and pumped hydro storage facilities. The FERC incentive transmission rates are intended to provide greater than usual returns on investments in transmission technology in order to encourage the modernization of the grid. The problem, of course, is that distributed energy systems, even though they can relieve congestion and otherwise impact the transmission system, physically interconnect into local distribution systems, rather than farther up line into the distribution system itself. As a consequence it is not clear that distributed energy storage systems can ever be subject to FERC jurisdiction and incentive transmission rates, even though they can perform the same transmission-related function as centralized bulk storage facilities. We have asked FERC to look into this problem and to help "level the playing field."

Finally, we have asked FERC to convene a technical workshop on distributed energy storage technology. There would be much for such a workshop to discuss. In addition to the two other issues highlighted in

our comments, participants would need to think through how to define the different functions that distributed energy storage facilities serve for purposes of compensation, how best to account for and report those functions, and what business models are likely to evolve by which these multifunction distributed energy facilities will be developed and operated. While distributed energy storage facilities share many of these same issues with centralized bulk energy storage technologies, which have largely been the focus of FERC's attention to date, distributed energy storage involves additional issues and complexities that must be better understood and worked through. NAATBatt has asked FERC to examine those issues specifically and hopes to be an important resource for FERC as its position on distributed energy storage technology develops and evolves.

NAATBatt's next effort to promote distributed energy storage technology will be to meet with representatives of state public utilities commissions and call their attention to many of the same issues that NAATBatt raised in its comments to FERC. NAATBatt hopes to sponsor an industry meeting with the National Association of Regulatory Utility Commissioners (NARUC) in the fall. Details will follow soon.

A full text of the comments that NAATBatt filed with FERC on Monday can be found at: <http://naatbatt.org/publications/articles/>.



James J. Greenberger  
Executive Director

August 13, 2010

## North American Industry Announcements and Calendar

- **Next Webinar Program: Advanced Lead Acid Battery Technology:** The NAATBatt Webinar series continues on Thursday, September 2, 2010, with a program entitled "*Developments in Advanced Lead Acid Battery Technology: Everything You Thought You Knew But Don't*". The program will examine some new developments in lead acid batteries that may breathe new life into a hundred year old technology that many have already written off in favor of advanced lithium-ion. Our speakers, Steve Clarke of East Penn Manufacturing/Applied Intellectual Capital and John Gagge of EnerSys Americas, will explain why reports of the death of lead acid technology may be greatly exaggerated and how lead acid may yet compete with lithium-ion batteries in advanced automotive and grid-level stationary storage applications. The registration link (complimentary) for employees of NAATBatt member firms is <http://events.meetingbridge.com/Register/?06123183141&code2>. Non-NAATBatt members are welcome to attend for \$30 by clicking on the following link: <http://events.meetingbridge.com/Register/?06123183141>.
- **NiChE Workshop on Materials for Large-Scale Energy Storage:** The Council for Chemical Research will host a NiChE Workshop on Materials for Large-Scale Energy Storage on September 16-17 at the National Institute for Standards and Technology (NIST) in Gaithersburg, MD. The workshop will delve into the end-use applications and market drivers for large-scale storage, the R&D efforts that are pushing the boundaries, as well as highlighting some near-deployment technologies. Additional information about the program may be found at: <http://www.ccrhq.org/articles/niche-workshop-materials-large-scale-energy-storage>
- **Battery Show 2010:** The Battery Show, a conference and exposition focused on multiple battery chemistries and applications will be held in San Jose, California on October 5-7, 2010. Information about the show can be found at: <http://www.thebatteryshow.com/index.php>
- **218<sup>th</sup> Meeting of the Electrochemical Society:** The next biannual ECS meeting will take place on October 10-15, in Las Vegas, Nevada. The meeting will feature a wide range of experts throughout the fields of solid-state and electrochemical science and technology, getting together to communicate with both colleagues and a vital market. More information can be found at <http://www.electrochem.org/meetings/biannual/218/218.htm>
- **Advanced Energy Storage 2010:** FullPower, Inc. will be leading a series of exhibits on October 12-14, in San Diego, California to showcase the technological capabilities of leading suppliers of advanced batteries, energy storage systems, and ultracapacitors. Seminars will discuss the insights and impacts on these various technologies. Additional information may be found at <http://www.fullpowerinc.com/AES2010/AESHome.html>
- **Battery Power 2010 Conference:** Battery Power 2010 will be held in Dallas, Texas on October 19-20, 2010. NAATBatt is a supporting organization of the conference. Information about the conference and registration for it may be found at: [http://www.batterypoweronline.com/bppt-conf10/bp10\\_supportingorg.php](http://www.batterypoweronline.com/bppt-conf10/bp10_supportingorg.php)

- **U.S. National Electric Vehicles Safety Standards Summit:** On October 21-22, in Detroit, Michigan, the National Fire Protection Association (NFPA) will be holding a safety summit along with co-sponsor SAE International in order to ensure standards on electric cars. The summit will focus on how to implement such standards on a rapidly growing industry, in which technology is swiftly improving. To find out more about the summit visit [http://www.nfpa.org/newsReleaseDetails.asp?categoryId=488&itemId=46997&cookie\\_test=1](http://www.nfpa.org/newsReleaseDetails.asp?categoryId=488&itemId=46997&cookie_test=1)
- **Rare Earth Metals Summit III:** Infocast's Rare Earth Metals Summit III will be held in Washington, D.C. on October 25-27, 2010. The conference will examine the supply and value chains for rare and strategic metals, including lithium. NAATBatt is a supporting organization of the conference and NAATBatt members will be entitled to a 10% discount on registration. Additional details will follow.
- **Annual DOE Program Update Conference – Energy Storage R&D Programs:** Sandia National Laboratory's U.S. DOE Energy Storage Systems Research Program (ESS) will be held on November 2-4, in Washington D.C. The program will review the latest DOE sponsored research in advanced battery technology, power conditioning and others topics relating to advanced energy storage. Registration for the conference can be found here: <http://www.sandia.gov/ess/About/newsevents.html#conf>
- **Future of Electric Vehicles Conference:** The Future of Electric Vehicles Conference will be held in San Jose, California on December 7-8, 2010. The conference will have representatives for all electric vehicle types, components, and uses. The conference will permit attendees to learn more about electric vehicles in each and every form. Information and registration for the conference can be found on the website at: <http://www.idtechex.com/electric-vehicles-usa-10/>
- **Advanced Automotive Batteries Conference & Symposium 2011:** The Advanced Automotive Batteries 2011 Conference (AABC) will be held on January 24-28 2011, in Pasadena, California. This is the next domestic program in the series of conferences on automotive batteries sponsored by Dr. Menahem Anderman and Total Battery Consulting. The conference Web site can be found at: <http://www.advancedautobat.com/automotive-battery-conference-2011/index.html>.
- **NAATBatt Membership Information.** NAATBatt is taking applications for 2010 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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