

Intryck från CEATEC – Combined Exhibition of Advanced Technologies, 2012.10.2 – 10.6, Tokyo, Japan

Sammanfattning:

Japan har länge legat i teknikfronten på många områden, inte minst inom energi, transporter och infrastruktur. Trots ekonomisk stagnation finns fortfarande starka drivkrafter att utveckla nya tekniska lösningar på samhällsliga utmaningar, inte minst med tanke på den strukturomvandling som väntas inom energisektorn under kommande år. Ambitionen är att kärnkraften ska fasas ut till 2040 och ersättas i huvudsak med förnybara alternativ samt genom energieffektivisering.

På årets CEATEC-mässa visade företagen upp framtidens lösningar för hur denna målsättning kan nås. "Smarta teknologier" som energistyrningssystem (EMS) för transporter, byggnader och städer var ett dominerande område. Detta är inte nytt i sig. Vad som dock väcker intresse är hastigheten med vilken teknikutvecklingen sker vilken leder till den möjliga slutsatsen att alla dessa tekniker kommer att ha en stor påverkan av energisituationen i Japan och världen under kommande år.

En viktig fråga att studera närmare är hur de nya styrmedel som införts eller planeras i Japan, till exempel det nya systemet för inmatningstariffer, kommer att påverka teknikutveckling och teknikspridning framöver.

Eventrapporten har skrivits av praktikant Elsa Thorselius, som kan kontaktas för frågor.

Myndigheten för tillväxtpolitiska utvärderingar och analyser

Tokyo
Office of Science and Innovation
Embassy of Sweden
1-10-3-400, Roppongi
Minato-ku
TOKYO 106-0032
Japan
Tel: +81 3 5562 5030
Fax: +81 3 5562 9090
info@tillvaxtanalys.se
www.tillvaxtanalys.se

Östersund (säte)
Studentplan 3, 831 40 Östersund
Besöksadress: Studentplan 3
Tel: 010 447 44 00
Fax: 010 447 44 01
info@tillvaxtanalys.se
www.tillvaxtanalys.se
Org. nr 202100-6164
Bank: Danske Bank
Kontonummer: 12 810 107 041
Swift: DBBasesX
IBAN: SE6712 0000 000 12 810 107 041

Samtliga kontor
Östersund
Stockholm
Brasilia
New Delhi
Peking
Tokyo
Washington DC

CEATEC, Combined Exhibition of Advanced Technologies is Japan's largest IT and Electronics exhibition and conference. One of the main objectives is 'to gather industry organizations to present clear social messages, thereby supporting industrial development and contributing to lifestyles, economies and society in the digital network age'.¹ This year's theme was *SMART Innovation – Creating a prosperous lifestyle and society*. Not too different from previous year's theme: *SMART Innovation – Cutting edge technologies create the future* and the name was not the only aspect that was similar at this year's CEATEC compared to last year.

The nuclear accident and the subsequent electricity shortage has increased demand from the society, therefore accelerating development, innovation and market introduction of technologies associated with energy conservation, creation and storage. The central aspect in managing those three parts of energy is the Energy Management System.

The smart concept, which in the CEATEC case refers to technology that makes our lives and society more comfortable, is like last year, still one of the most dominant trends in new products made by Japanese technology companies. The smart technology often involves automation technology and EMS (Energy Management Systems) which main purpose is to save energy and energy costs.² The output from EMS applications can be data such as energy availability, real time usage and price which means that, with an automated system, the home (HEMS), building (BEMS) or community (CEMS) can control the non-immediate energy needs to either the highest availability or the lowest price.

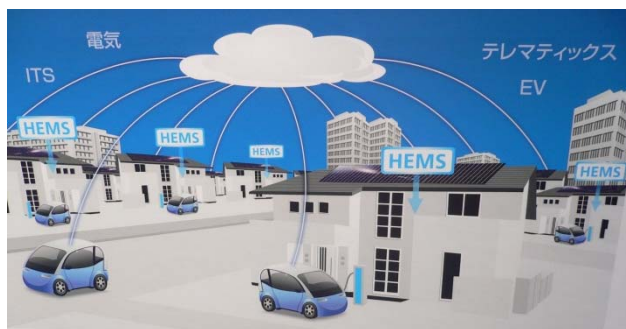


Figure 1. Toshiba display their vision of a Home Energy Management System (HEMS) in every household



Figure 2. Battery for energy storage from Toshiba

Toshiba, Mitsubishi, Panasonic and Toyota are some of the many Japanese companies that displayed Home EMS complete with a solar panel on the roof and an electric vehicle in the garage. Toshiba also put a large emphasize on their newly

¹ CEATEC JAPAN Organizing Committee, 'Exhibition Theme/Exhibition Outline', in *CEATEC Japan*, viewed on 10 October 2012, <<http://www.ceatec.com/2012/en/outline/outline03.html>>

² J. Pickrell, 'Welcome to the smart grid', in *ABC Environment*, published on 1 May 2012, viewed on 9 October 2012, <<http://www.abc.net.au/environment/articles/2012/05/01/3482274.htm>>

developed battery which can be used to store solar energy throughout the day when the solar energy availability is high, to the night when electricity is needed but the availability is low. In addition to the Home EMS, several companies including Fujitsu and Hitachi displayed so called smart cities with community EMS for controlling energy supply in the major cities and regions in Japan.

As mentioned above, included in most Home EMS is the solar panel. The photovoltaic energy is gaining market shares of the electricity in Japan right now and the cost of solar panels have during the past few years fallen by more than 80 percent.³ This trend has led to the development of new panels from many Japanese companies including Panasonic, Toshiba and Mitsubishi which were displayed at CEATEC.

Another major trend category spotted both this year and last year was EVs (Electric Vehicles). In addition to its utilization as part of battery storage for energy created at homes, i.e. EV-to-Home, major Japanese car manufacturers such as Nissan Toyota and Mitsubishi all displayed their latest models. The only single-passenger EV model, Toyota's concept EV "Smart INSECT," featuring Kinect motion sensor and voice recognition⁴ caught the most attention.



Figure 3. Toyotas' single-passenger EV "Smart INSECT"

Figure 4. Hitachi EV charging station

Along with the EVs, came also the EV charging stations which was represented by a great range of Japanese companies including NEC (Nippon Electric Company) and Hitachi. CHAdeMO, the Japanese DC fast charge standard developed by TEPCO, Nissan, Mitsubishi and Fuji Heavy Industries, is having difficulties in the race of international standardization at the moment but Japanese companies still

³ K. Bullis, 'New Solar Panel Designs Make Installation Cheaper', in *Technology Review*, published 6 July 2012, viewed on 9 October 2012, <<http://www.technologyreview.com/news/428423/new-solar-panel-designs-make-installation-cheaper/>>

⁴ S. Silbert, 'Toyota's Smart Insect concept EV packs Kinect motion sensor, voice recognition' in *Engadget*, published on 2 October 2012, viewed on 10 October 2012, <<http://www.engadget.com/2012/10/02/toyotas-smart-insect-concept-ev-kinect/>>

have a head start compared to the rest of the world which definitely showed at CEATEC.⁵

Also present at the exhibition was METI (Ministry of Economy, Trade and Industry) and NEDO (The New Energy and Industrial Technology Development Organization, a research funding organization). METI spoke of the revised energy plan which includes expanding hydro- solar- and wind energy aggressively in order to meet the energy demand in Japan when nuclear power is a fade memory. The feed-in tariff was also one of the main things communicated. NEDO emphasized Japan's smart community, water resource management and recycling that they believe can be used worldwide. NEDO is performing several smart community projects overseas including two in Europe (Malaga and Lyon) to create "low carbon smart communities". These activities are a step in developing 'the next-generation power grid that is designed to provide a two-way flow of electric power and communications'.⁶

Another theme present is the large city safety aspect. Mitsubishi had a big installation regarding "Safeguarding Society Zone" and similar demonstrations could be found in other companies including Panasonic. The awareness of the importance of a functioning emergency plan has clearly gone up after the Fukushima accident.

In conclusion, this year's CEATEC offered a great deal of repetition from the previous year's exhibition. Smart, EMS, EVs, EV charging infrastructure and photovoltaic energy are all things we have seen before. What is astonishing is the level of speed new developments within these areas occur which leads to the possible conclusion that all these technologies might have a big impact of the energy situation in Japan and the world in the years to follow.

⁵ S. Blanco, 'GM strikes out against CHAdeMO DC fast charging; opponents say SAE has 'the plug without the cars'', in *AutoblogGreen*, published on 23 May 2012, viewed on 9 October 2012, <<http://green.autoblog.com/2012/05/23/gm-strikes-out-against-chademo-dc-fast-charging>>

⁶ NEDO, *Profile of NEDO April 2012 – March 2013*, NEDO, Tokyo, 2012, p. 10

References

Information Brochure

NEDO, *Profile of NEDO April 2012 – March 2013*, NEDO, Tokyo, 2012, p. 10

Web Document

Blanko, S, 'GM strikes out against CHAdeMO DC fast charging; opponents say SAE has 'the plug without the cars'', in *AutoblogGreen*, published on 23 May 2012, viewed on 9 October 2012,
<<http://green.autoblog.com/2012/05/23/gm-strikes-out-against-chademo-dc-fast-charging>>

Bullis, K, 'New Solar Panel Designs Make Installation Cheaper', in *Technology Review*, published 6 July 2012, viewed on 9 October 2012,
<<http://www.technologyreview.com/news/428423/new-solar-panel-designs-make-installation-cheaper/>>

Pickrell, J, 'Welcome to the smart grid', in *ABC Environment*, published 1 May 2012, viewed on 9 October 2012,
<<http://www.abc.net.au/environment/articles/2012/05/01/3482274.htm>>

Silbert, S, 'Toyota's Smart Insect concept EV packs Kinect motion sensor, voice recognition' in *Engadget*, published on 2 October 2012, viewed on 10 October 2012,
<<http://www.engadget.com/2012/10/02/toyotas-smart-insect-concept-ev-kinect/>>