

13 January 2010

HITACHI DEVELOPS LITHIUM-ION BATTERIES FOR PLUG-IN HYBRID ELECTRIC VEHICLES

- Expanding the battery system business with a view toward industrial applications -

Tokyo, January 13, 2010 --- Hitachi, Ltd. (NYSE:HIT / TSE:6501, hereinafter Hitachi) today announced that Hitachi and Hitachi Vehicle Energy, Ltd. ,which develops and manufactures lithium-ion batteries for automotive applications, such as hybrid electric vehicles, have developed lithium-ion batteries for plug-in hybrid electric vehicles, a first for the Hitachi Group. These new batteries were developed in response to the growing demand for environment-friendly vehicles resulting from the increasingly strict regulations on automobile exhaust emissions around the world. Starting from the spring of 2010, the company will begin shipping samples to automobile manufacturers in Japan and overseas.

Plug-in hybrid electric vehicles (PHEVs) have two running modes: an EV (electric vehicle) mode, in which the vehicle runs on a motor alone, and an HEV (hybrid electric vehicle) mode, in which the vehicle is driven by both the engine and the motor. PHEVs offer dramatically improved gas mileage and reduced exhaust emissions, and so are considered a strong contender among environment-friendly vehicles of the future. The newly developed lithium-ion batteries offer the high performance and reliability required for use in PHEVs, achieving both high energy (durability; contribute to gaining cruising distance) and high output (instantaneous force) performance. In the future, Hitachi will make preparations for the shift to volume production, incorporating the expertise that it has accumulated over many years through its Monozukuri technologies and its experience in global markets.

The newly developed lithium-ion batteries offer the following unique features:

First, they have an electric capacity of 25Ah, so can run for about 20 km in EV mode, using the motor alone. This represents 4-5 times the capacity of the lithium-ion batteries for hybrid electric vehicles (HEVs) that Hitachi has been developing up to now.

Second, Hitachi has developed new electrodes that offer an outstanding balance of high energy (EV running) and high power (HEV running) performances. Normally, high energy and high power are reciprocal factors in battery design, but these new electrodes achieve both factors simultaneously by optimizing the electrodes' thickness and the composition of the active materials, and by enhancing the composition of the conductive materials to maintain high output.

Third, the batteries incorporate a heat-resistant separator that prevents internal short-circuits and dramatically improves safety. The separator is a key component of lithium-ion batteries that separates

the cathode and the anode, and at the same time maintains ionic conductivity. Because the electric capacity of PHEV batteries is considerably higher than that of HEV batteries, consideration for safety becomes even more important. The heat-resistant separator adopted in these new batteries was specially designed and developed for automotive applications, based on ceramic separator technologies.

To accommodate larger battery sizes, a variety of simulation technologies, including structural analysis and vibration analysis, have been utilized to increase battery strength and enhance the collector structure. In collaboration with Hitachi Research Laboratory and the Mechanical Engineering Research Laboratory, Hitachi has achieved a battery structure with an even higher level of reliability than previous units.

In 2000, the Hitachi Group became the first in the world to begin volume production of safe, high-performance, long-lasting automotive lithium-ion batteries. Since then, it has brought a cumulative total of 900,000 cells to the market, mainly for commercial hybrid buses and trucks, as well as for railway cars and other applications. The lithium-ion batteries being released today will serve to further expand the range of applications, not only in automobiles, but also in the Social Innovation Business, which is a core area of business for the Hitachi Group; for example, in railways, construction and industrial equipment, power storage devices, and other industrial fields. To achieve this goal, Hitachi will provide customers with optimum solutions in the form of battery systems that also incorporate control devices.

Hitachi Automotive Systems, Ltd. (President and CEO: Kunihiko Ohnuma) will undertake sales of these automotive lithium-ion batteries. Hitachi will also display lithium-ion batteries for plug-in hybrid electric vehicles at the 1st International Rechargeable Battery Expo, which will be held at Tokyo Big Sight from March 3-5, 2010.

These development activities used some of the results of research contracted by the New Energy and Industrial Technology Development Organization (NEDO). Hitachi has been participating in a national project related to large-scale lithium-ion batteries being promoted by NEDO and the Japanese Ministry of Economy, Trade and Industry since 1992, and will continue its efforts to incorporate the results of such contracted research into practical applications as quickly as possible.

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▪ **Outline of Hitachi Vehicle Energy, Ltd.**

Company Name: Hitachi Vehicle Energy, Ltd.

Representative: Hidetaka Kawamoto

Common Stock: 7.5 billion yen

(Hitachi, Ltd. 65.3%, Shin-Kobe Electric Machinery Co., Ltd. 24.7%, Hitachi Maxell, Ltd. 10.0%)

Established: June 25, 2004

Principal Office: 1410 Inada, Hitachinaka-shi, Ibaraki, Japan

Business: Marketing, development and manufacture of lithium-ion batteries for hybrid electric vehicles, etc.

▪ **About Hitachi Ltd.**

Hitachi, Ltd., (NYSE: HIT / TSE: 6501), headquartered in Tokyo, Japan, is a leading global electronics company with approximately 400,000 employees worldwide. In fiscal 2008 (ended March 31, 2009) consolidated revenues totaled 10,000 billion yen (\$102.0 billion). The company offers a wide range of systems, products and services in market sectors including information systems, electronic devices, power and industrial systems, consumer products, materials, logistics and financial services. For more information on Hitachi, please visit the company's website at <http://www.hitachi.com>.