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AUSTRALIA: Extreme Heat Waves More Common

According to a recent study of climate modeling, extreme heat waves will affect about 10% of total land area of Australia by 2020, doubling today's figure. By 2040, it will quadruple. The report states that in the first half of the 21st century, these events will occur regardless of the amount of CO2 emissions.

<http://www.abc.net.au/science/articles/2013/08/15/3826303.htm>

JAPAN: Focused Funding for 22 Universities

The Ministry of Education, Culture, Sports, Science and Technology (MEXT) will focus its funding on 22 universities and research institutions, expecting them to accomplish world-class research in S&T fields, as outlined in the table below.

Support per year for 10 years	Institutions
Yen 400 million (\$4 million)	Tokyo, Kyoto, Tohoku, Nagoya universities
Yen 300 million (\$3 million)	Tsukuba, Tokyo Medical and Dental, Tokyo Tech, Electro-Communications, Osaka, Hiroshima, Waseda and Kyushu universities, Nara Advanced Institute of S&T, National Institutes of Natural Sciences, High Energy Accelerator Research Organization, Research Organization of Information and Systems
Yen 200 million (\$2 million)	Hokkaido, Kobe, Okayama, Kumamoto, Keio universities, Toyohashi University of Technology

MEXT first selected 27 institutions based on 10 criteria, including the competitive grant amount per researcher and the number of Grants-in-Aid for Scientific Research, and then shortened the list after interviews. MEXT will allocate Yen 6.8 billion (\$68 million) in JFY2013. MEXT expects these institutions to advance Japan's research competitiveness in the world.

Note: This summary is a translation of a Nikkei article and MEXT website article-August 7, 2013

JAPAN: Industrial R&D Investment Sharply Increased

Due to the weaker value of the Yen, Japanese companies are investing more on R&D. Twenty-four percent of the Nikkei-surveyed companies increased their R&D investment by more than 10% compared with last year. The average increase for the surveyed companies' R&D investment from last year was 5.4%. The total R&D investment amount for the 261 companies surveyed was Yen 11,380.6 billion (\$113 billion), the fourth year of consecutive increase. Not only electronics, IT and machinery, but also materials and civil engineering/construction industries are focusing on research themes related to energy-saving and new-energy technologies. Also, they have more collaboration with universities in Asia (China, Singapore, and Thailand in the order of the number of collaborations) than in previous years.

Note: This summary is a translation of a Nikkei article-August 8, 2013

JAPAN: Four Semesters

A few Japanese universities have changed to a four-semester system, shifting from two or three semesters. It will enable more opportunities for students to study abroad, e.g., attending summer schools in foreign universities. The new system of (1st semester) April-May, (2) June-July, (3) October-November, and (4) December-January enables the students to be away from school during August-September and February-March. This system may be adopted by other universities.

Note: This summary is a translation of a Nikkei article-August 5, 2013

JAPAN: S&T Indicators

According to the S&T Indicators 2013 released by the National Institute of Science and Technology Policy, Japan's total R&D expenditures in 2011 were Yen 17.4 trillion (\$174 billion), an increase of 1.6% from the previous year. The numbers of students enrolled in undergraduate, masters, and Ph.D. programs decreased for two consecutive years in 2011 and 2012 from the previous years. The number of S&T papers produced was third in the world following the U.S. and China. The number of patents, the indicator for international comparison of the number of inventions, ranked Japan as #1 in the world.

http://www.nistep.go.jp/wp/wp-content/uploads/RM225_indicator2013_abstract.pdf

KOREA: Wireless Online Electric Vehicle

An online electric vehicle (OLEV) that can be charged while either stationary or running was developed by the Korea Advanced Institute of Science and Technology (KAIST). OLEV does not need pantographs to feed power from electric wires. OLEV receives power wirelessly through the application of the "Shaped Magnetic Field in Resonance (SMFIR)" technology. SMFIR is a new technology developed by KAIST and enables electric vehicles to transfer electricity wirelessly from the road surface while moving. Power comes from the electrical cables buried under the surface of the road, creating magnetic fields. The receiving device installed on the underbody of the OLEV converts these fields into electricity. The length of power strips installed under the road is 5-15% of the entire road, requiring only a small portion of the road to be rebuilt with the embedded cables. OLEV has a small battery (one third the size of a battery equipped in a regular electric car) and complies with the international electromagnetic fields (EMF) standards as 62.5 mG, which is within the margin of the safety level for human health. The road has a smart function of distinguishing OLEV buses from regular cars – the segment technology is deployed to control the power supply by switching on the power strip when OLEV buses pass along, but switching it off for other vehicles, thereby preventing EMF exposure and power consumption. The SMFIR technology supplies 60 kHz and 180 kW remotely to transport vehicles at a stable and constant rate.

http://www.kaist.edu/english/01_about/06_news_01.php?req_P=bv&req_BIDX=10&req_BNM=e_d_news&pt=17&req_VI=4404



KOREA: International Conference for the Integration of Science, Technology and Society (CISTS)

CISTS has annually been held since 2005 at the Korea Advanced Institute of Science and Technology (KAIST), inviting distinguished speakers and guests from the world to share their insights and expertise with students from Korea and abroad. The KAIST-CISTS this year, titled “Perfect Alliance: Coexistence for Human Society,” included 335 students from 103 universities in 22 countries and 25 distinguished speakers, including Walter Bender, former director of MIT Media Lab and David Christian, Macquarie University in Australia.



http://www.kaist.edu/english/01_about/06_news_01.php?req_P=bv&req_BIDX=10&req_BNM=e_d_news&pt=17&req_VI=4409