Science, Technology and Education News from China

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Introduction

This month's newsletter starts with a policy briefing of the new guideline of China's National Torch Hi-tech Industrialization Program, which emphasizes on industry cluster, talents and international cooperation. Also in this month, the tragic train collision accident in China raised question on the country's ambitious high-speed railway plan. Pilot projects on electrical taxi showed that electrical cars are still tough to develop in China. China's submersible Jiaolong reaches depth of 5,057 meters this month in a test dive. In education, increasing number of Chinese universities found themselves troubled by debts due to expansion. Chinese government promises to increase university enrolment rate for Tibetan students. In health, Guangzhou Province tried to challenge the one-child policy.

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[1] Please click on the blue texts to activate the hyperlinks to either email addresses or related websites.

Policies

National Torch Program: The Years Forward

After the release of *12th Five Year Plan FYP for the Development of Science and Technology*, the Torch High-Tech Industrialization Center also published guidelines for its Torch Program.

Established in 1988, the Torch Program, under the supervision of the Ministry of S&T, aims at promoting high-tech industry in China. The program is an umbrella for several elements, including National High-Tech Zones, Incubators, National University Science Park, Industry Base, Productivity Promotion Center and the "Innofund" created to support high-tech startups.

Over the past 20 years, development of hi-tech industry was not without problems. As Premier WEN Jiabao recently pointed out in a speech, the problems with China's technology development can be summarized by "uncoordinated", "lack of clear goals and roadmaps" and "lack of indigenous innovation" in spite of the fancy infrastructure of the science parks and generous government investment[2].

To tackle the problems, in the 12th FYP period, the Torch Program will focus on the following areas:

- Design and develop "**innovation-driven industry clusters**". The idea of industry clusters is to integrate and enlarge current elements. With the cluster, the goal is to bring research and industry closer together to promote commercialization of technology. In the next phase, strategic industries[3] will be the key development areas, and the central government will assign specific priority industries to different regions to avoid repetitive work or overcapacity. To boost research capability of the industry cluster, universities and research institutes are encouraged to set up branches in National High-tech Zones.

- Promote **science service industry**. Science service industry is the next area to improve for the management of industry clusters after infrastructure has been largely installed. It has been also identified as a key in developing industry cluster. In the future, Incubators, IPR service, productivity promotion centers, start-up consulting, international investment consulting services, innovation platforms and technology commercialization platforms will become standard in national hi-tech zones.

- Design and implement **talent policy**. Talents are more important than ever for all the development programs in China, Torch Program is no exception. Overseas returnees continue to be the top priority. Zhongguancun in Beijing has been identified as the first "Special Talent Zone" to implement preferential policies to attract top talents. "Oversea returnees, innovative entrepreneurs and industry leaders" are the most welcomed. Some of the "Zhongguancun only" policies include simplified visa/work permit process, easier access to projects, more flexibility in spending project funds, affordable housing solution, healthcare package, arrangement for children's education and spouse's job.

- "**Engage internationally**." On top of investment promotion, which is the usual business for the industry cluster, in the next phase, two particular goals are set as priorities. "Research in China" is one, as the hi-tech zones now prefer R&D centers to factories. Joint R&D programs in China are also encouraged to promote international public-private partnership (PPP). To this end, national hi-tech parks are encouraged to open overseas service centers for the convenience of foreign companies and talents, especially potential returnees. "Becoming active in international technology standards setting" is the other goal, which should be gradually realized as China's ingenious innovation capability grows.

The guideline of Torch Program is basically a **continuation** of the major national science plans. Change on development priorities from "hardware" infrastructure to "software"—service and talents—can be expected. Key industries will shift from IT, which is the traditional definition of "high-tech" to the newly defined "strategic industries."

[2] "A Few Issues in Science and Technology", Wen Jiabao, *Theory Magazine*, July 2011

[3] Strategic industries were defined by the Chinese central government in 2010 as the key priorities for development during the 12th FYP period. The industries include: energy efficiency and environmental protection, information technology, biotech, high-end equipment manufacturing, new energy, new material, and new energy vehicles. The goal is to make China competitive internationally in these sectors which are believed to become major economic growth points.

News

1. Crash Raises Questions on China's Push to Build High-Speed Passenger Rail Lines

(NY Times, 26-07-2011)

The train collision on a high-speed rail line in eastern China on July 23rd that killed 39 people and injured 210 others has raised fresh doubts about the safety of one of the largest, most expensive public works projects ever undertaken. With the establishment of the National Gene Bank in Shenzhen, China will be able to better protect, research and utilize its precious genetic resources, boosting the genetics industry and safeguarding the country's genetic information, said Qi Chengyuan, head of the high-tech industry department of the National Development and Reform Committee (NDRC).

Those concerns come as Beijing is investigating corruption accusations against high-ranking railway officials and allegations that some unqualified companies may have been awarded contracts for part of the $400 billion project.

High-speed rail's excellent safety record in Europe and in Japan — not a single fatality has occurred in Japan since the technology was introduced in the 1960s — has led some experts to ask if China is moving too swiftly to build about 12,000 miles of track by 2020.

The government's only explanation for the accident has been that a lightning strike disabled equipment, allowing a train carrying about 550 passengers to strike the rear of another train with more than 1,000 riders on a viaduct near the city of Wenzhou in Zhejiang Province. Eight cars derailed, with four hurtling off a bridge.

Immediately after the accident the government dismissed three more railway officials without explanation, and announced a thorough investigation into its cause.

Several rail experts have said they doubt that lightning was the sole cause of the crash. They questioned why safety mechanisms failed to warn or slow the second train.

In China, a torrent of public criticism continued, with bloggers and citizens asking why the government was not more forthcoming about the cause of the crash, why parts of the wreckage were buried at the site and why a baby was found alive in the wreck even after railway authorities had said there were no further signs of life.

The government moved swiftly to compensate victims' families, agreeing to pay one family 500,000 renminbi, or more than $77,000, according to the official Xinhua news agency. One Chinese media outlet reported that bonuses of 100,000 renminbi, or more than $15,000, were promised to families who signed compensation agreements quickly.

(http://www.nytimes.com/2011/07/27/world/asia/27china.html?ref=china)

2. China's Submersible Jiaolong Reaches Depth of 5,057 Meters in Pacific Ocean

(Global Times, 26-07-2011)

The hatch of the Jiaolong, a Chinese manned submersible, opened at 10:13 am Beijing time, returning after having successfully reached a depth of 5,057 meters at 6:12 am. The test dive, which commenced at 3:38 am on Tuesday in international waters of the Pacific Ocean, achieved complete success, the State Oceanic Administration (SOA) said. Ye Cong, Yang Bo and Fu Wentao were the members of the three-man crew.

Such a depth means the Jiaolong is capable of reaching over 70 percent of the seabeds in the world, said Wang Fei, deputy director of SOA and director of the leading team of the diving test program.

"It will pave way for a record-breaking 7,000-meter test dive in 2012," Wang added.

Japan is the current world record holder, whose Shinkai 6500 succeeded in diving to 6,527 meters in August 1989.

"The purpose of this diving test program is to find problems with the Jiaolong and improve it constantly," Wang said.

Deep diving poses a challenge to the submersible's capacity to withstand water pressure and its tightness, according to Wang."At a depth of 5,000 meters, the Jiaolong withstood great pressure amounting to 5,000 tonnes per square meter," Wang said. But in less than one year, the Jiaolong has been technically improved, with its operating system, insulation monitoring system and video system upgraded. Deep diving is also a test for the crew onboard, because they have to work underwater continuously for six to eight hours, Wang said.

After the 5,000 meter dive, the Jiaolong is expected to conduct another one at a proper time, during which it will do some scientific research and further test different functions of the craft, said Wang Fei.

The Jiaolong is the world's first manned submersible designed to reach the depth of 7,000 meters below sea level, according to Xu Qinan, chief designer of the submersible. Xu said the Jiaolong's equipment was state of art and its digital underwater communication systems and undersea mobility systems allowed the craft to "move back and forth easily under the sea."

The domestically-manufactured Jiaolong, named after a mythical sea dragon, dived to a depth of 4,027 meters with three people aboard in about five hours last Thursday. But its attempt to reach 5,000 meters in another dive on Friday was postponed due to unfavorable sea conditions.

The craft completed 17 dives in the South China Sea from May 31 to July 18 last year, with the deepest reaching 3,759 meters with three crew members on board.

China, which initiated the Jiaolong project in 2002, is the fifth country to send a man 3,500 meters below sea level, following the United States, France, Russia and Japan.

(http://www.globaltimes.cn/NEWS/tabid/99/articleType/ArticleView/articleId/668021/Chinas-submersible-Jiaolong-reaches-depth-of-5057-meters-in-Pacific-Ocean.aspx)

3. Cutting AIDS Funding to China a Big Mistake: UNAIDS

(Reuters, 11-06-2011)

It will be a "big mistake" for donors to cut funding to China in the fight against AIDS, the head of UNAIDS said, rebuffing critics who say the world's second-largest economy should no longer be a recipient of such aid.

Several non-governmental organizations (NGOs) involved in fighting AIDS in China say they are facing more difficulties in receiving donations from developed nations because of the country's wealth.

"I think it'll be a big mistake for a donor and particularly, for anyone who's invested in China today, to withdraw, for the simple reason that this funding is a catalytic fund," Michel Sidibe, executive director for the Joint United Nations Program on HIV/AIDS told Reuters in an interview.

Sidibe said the Global Fund to Fight Aids, Tuberculosis and Malaria was helping to bring innovation and make a difference in most-affected countries by establishing a new link among the government and civil society and NGOs to work together.

The Global Fund has approved funding of $947 million to China, of which $369 million goes to fighting AIDS. The fund's chief said in April that donors' decisions to suspend $180 million of aid to the Global Fund could hit efforts to combat the diseases. Germany, Spain and Denmark temporarily stopped payments to the Geneva-based fund earlier this year after hearing reports donations had been misused.

HIV/AIDS became a major problem for China in the 1990s when hundreds of thousands of impoverished farmers in rural Henan province became infected through botched blood-selling schemes. It is now spreading primarily via sexual contact.

Beijing was initially slow to acknowledge the threat of the disease but has since stepped up its efforts, spending more on prevention programs, launching steps to give universal access to anti-retroviral drugs to contain the disease, and introducing policies to curb discrimination. […]

China, the world's most populous nation with 1.34 billion people, had 740,000 people infected with HIV, the virus that causes AIDS and 105,000 AIDS patients in 2009, state news agency Xinhua said, citing United Nations estimates.

(http://www.reuters.com/article/2011/07/11/us-china-aids-idUSTRE76A3B220110711)

4. Province Seeks Leeway on One-Child Policy

(SCMP, 12-07-2011)

China's most populous province has asked Beijing for permission to pilot a province-wide relaxation of the mainland's controversial one-child policy. The special status would allow the province to become China's first, since the one-child policy was introduced in 1979, in which couples can have a second baby if either spouse is a single child.

Voices calling on the central government to rethink its population policy have been growing. Many economists are worried that China's phenomenal economic growth could be slowed down by a rapidly ageing society, a dwindling labour pool and mounting pressure on the social security system. After 2000, several provinces began to allow urban couples to have a second child if both parents are single children.

In an interview published by the province's official newspaper, Nanfang Daily, Guangdong family planning chief Zhang Feng said the province had tendered an official application to Beijing to run a pilot version of an adjusted one-child policy.

"Allowing more couples in Guangdong to have a second child will have little impact on overall population growth," Zhang said. […]

Guangdong Academy of Social Sciences population expert Zheng Zizhen welcomed the proposal, saying: "This is the first of many steps for fine-tuning the birth controls. The ultimate target is for everyone across the country to have two children regardless of background. We could see this happening by 2020."

The move might also help free up some of Hong Kong's public health resources by encouraging mainland women to give birth north of the border. The number of mainlanders giving birth in Hong Kong has surged since 2006, partly as a result of couples seeking to dodge the one-child policy.

However, Dr Peng Peng, a Guangzhou Academy of Social Sciences researcher, said Beijing was unlikely approve a major shift away from a fundamental national policy.

"The effectiveness of allowing couples where both parents are single children to have a second baby still remains to be seen," Peng said. "It's still very rare to see families having second children in the light of surging living costs such as housing and food prices unless the government introduces subsidies."

He said he expected mainland women would still seek to give birth in Hong Kong even after a relaxation of the policy because they wanted to secure Hong Kong residency and other advantages for the child.

(http://gochina.scmp.com/guangzhou/news/province-seeks-leeway-one-child-policy)

5. Electric Cars Remain Tough Sell in China

(NY Times, 04-07-2011)

A pioneering electric-taxi project in Shenzhen, China’s southern economic powerhouse, seems to be a success by most accounts. Riders are enthusiastic, there have been no accidents and drivers are termed “gracious” — not a term usually applied to mainland drivers.

The pilot project, which could be replicated in other cities, underpins China's ambitious plans to put at least half a million electric vehicles and plug-in hybrids on the road by 2015.

To bolster China's energy security, Beijing has pronounced electric vehicles a top priority. It has earmarked $1.5 billion annually for the industry for the next 10 years in the hope that it can transform the country into one of the leading producers of clean vehicles.

But even with government support and the enthusiasm of electric-taxi customers, challenges remain if electric vehicles are to gain broader acceptance and widespread use.

Charging stations are few and far between, repair shops are hard to find and the cars are costly. Even after generous government support, a Shenzhen electric taxi costs 80 percent more than the Volkswagen Santana that ordinarily cruises the streets of Shenzhen.

"The electric car is still too expensive, and we ended up paying a lot more than for a Santana, even with government subsidies," said Du Jun, general manager of Pengcheng E-taxi, the operator participating in the pilot project.

In Hangzhou, a similar green pilot program stumbled when all 30 of the city's electric taxis, which appeared on the streets in late January, were pulled from service in April after one cab's engine compartment caught fire. The fleet resumed operations in June. […]

Green cars have yet to take off with ordinary consumers, though, despite consumer subsidies that Beijing started offering last year in some cities.

Around Shanghai, for example, a metropolitan area with a population of more than 20 million, there are only 10 registered electric cars, while the number in Hangzhou is only slightly higher at 25, according to China Business News.

"Consumers are less concerned about government interests," said Mr. Russo of Synergistics. "They are more concerned about the economics and the real practical side of what it means to own an electric vehicle. "They are not going to buy an E.V. to save the planet," he continued. "They will buy it only when it saves them money."

(http://www.nytimes.com/2011/07/04/business/energy-environment/04green.html?pagewanted=2&ref=china)

6. Universities' Debts Rocketing as They Expand

(China Daily, 08-07-2011)

Many of the nation's universities are struggling with mounting debts, according to a recent ranking of their financial health by ifeng.com.

"It will become a bit of a gamble when people choose which university they want to go to because they will have no idea whether their choice of university might disappear from the national college entrance exam enrollment list," said Luo Yi, a Beijing resident who graduated from Jilin University. "I was surprised to see my university at the top of the debtors' list for Chinese universities."

Jilin University in Changchun, the capital of Northeast China's Jilin province, has 3 billion yuan ($464 million) of debts that are largely down to an expensive expansion project in 2000, according to the ifeng.com ranking.

Jilin University is closely followed by Guangdong University of Technology, which owes 2.3 billion yuan, and Zhengzhou University, which has debts of 2.1 billion yuan.

A total of 1,164 universities around the country have heavy debts that together are worth around 263.5 billion yuan, according to Liu Liyun, a senior official from the National Audit Office, who was quoted on China National Radio.

Fast-rising interest rates have exacerbated the problem but the main reasons why the universities have been performing poorly financially are the fact that fewer students are enrolling and the decisions by many universities to undertake ambitious campus expansions.

[…]

"Many Chinese universities have spent too much money on acquiring more land and erecting more buildings and overambitious expansion projects have pushed them into debt," said Xiong Bingqi, deputy director of 21st Century Education Research Institute.

Lao Kaisheng, an education policy researcher from Beijing Normal University, suggested that universities should concentrate on improving the quality of their teaching instead of their size.

In some provinces, including Shaanxi and Guangdong, local governments have been paying some of the debts accrued by universities.

Shaanxi government is setting up a 1.65 billion yuan fund to help its universities get through their financial crises.

The central government has also strengthened its financial support for education. China's Medium- and Long-term Plan for Education Reform and Development (2010-2020) calls for spending on education to equal 4 percent of the nation's GDP each year, starting in 2012.

Experts said Chinese universities can expect the government to invest more in their development but they also cautioned that the institutions should cut back on excessive expansion plans if they hope to become profitable.

(http://www.chinadaily.com.cn/china/2011-07/08/content_12859327.htm)

Events (August - September 2011)

August 2011

4th Art Science Society Lecture 2011
Date: August 13th
Place: Shanghai
Contact: Swissnex China

The 11th RHESSI General Workshop and High Energyt Solar Physics Symposium
Date: August 4th
Place: Nanjing
Contact: Purple Mountain Observatory, CAS

The 3rd International Symposium on Insect Physiology, Biochemistry and Molecular Biology
Date: August 7th
Place: Shanghai
Contact: Shanghai Institute for Biological Sciences

The Second International Conference on Biotic Plant Interactions
Date: August 8th
Place: Kunming
Contact: Shanghai Institute for Biological Sciences, CAS

The 26th International Conference on Low Temperature Physics
Date: August 10th
Place: Beijing
Contact: Chinese Physical Society, CAST

International Cosmic Ray Conference 2011
Date: August 11th
Place: Beijing
Contact: Institute of High Energy Physics, CAS

Swiss Day
Date: August 14th
Place: Shenzhen
Contact: General Consulate of Switzerland in Guangzhou, swissnex China & Swiss Tourism

International Academic Seminar on the Management of Arid Environment and Water Resources
Date: August 15th
Place: Urumqi
Contact: Xinjiang Institute of Ecology and Geography, CAS

10th International Conference on Electronic Measurement and Instruments, ICEMI 2011
Date: August 16th
Place: Chengdu
Contact: Chinese Society of Electronics, CAST

The 8th International Association for Landscape Ecology World Congress
Date: August 18th
Place: Beijing
Contact: Research Center for Eco-Environmental Sciences, CAS

Conference for Large Optical System Advanced Manufacturing Technologies
Date: August 19th
Place: Changchun
Contact: Changchun Institute of Optics, Fine Mechanics and Physics, CAS

The 13th International Symposium on Electroanalytical Chemistry
Date: August 19th
Place: Changchun
Contact: Changchun Institute of Applied Chemistry, CAS

The 5th International Symposium on Engineering Plastics
Date: August 21st
Place: Kunming
Contact: Institute of Chemistry, CAS

The 7th International Conference on Supercritical Fluids—Supergreen 2011
Date: August 27th
Place: Beijing
Contact: Institute of Chemistry, CAS

International Living with a Star
Date: August 28th to September 1st
Place: Beijing
Contact: Center for Space Science and Applied Research

September 2011

Multilateral Symposium on Precision Optical Equipment Technology
Date: September 1st
Place: Beijing
Contact: Academy of Opto-Electronics, CAS

China International Exhibition on financial Banking Technology, China 2011
Date: September 1st
Place: Beijing
Contact: China Financial Computerization Corporation of the People's Bank of China

The 1st China International Advanced Materials Industry Expo
Date: September 6th to 8th
Place: Harbin
Contact: Ministry of Industry and Information Technology

International Conference of Material and Manufacturing ICMM
Date: September 7th to 9th
Place: Liaoning
Contact: Liaoning University of Technology

International Conference on Nanoscience and Technology, China 2011
Date: September 7th
Place: Beijing
Contact: National Center for Nanoscience and Technology, CAS

Swissnex China lecture goes Architecture - Virtuarch
Date: September 7th
Place: Shanghai
Contact: Swissnex China

5th Art Science Society Lecture 2011
Date: September 8th
Place: Shanghai
Contact: Swissnex China

The 4th International Seminar on Global Environment Change, Urbanization and Health
Date: September 10th
Place: Beijing
Contact: Institute of Geographic Sciences and Natural Resources Research, CAS

The 17th China International Composites Industrial Technical Expo
Date: September 15th
Place: Beijing
Contact: China National Building Material Group Corporation

2011 China International Mechanical Manufacturing Technology & Equipment Exhibition
Date: September 16th
Place: Jinan
Contact: Chinese Mechanical Engineering Society

6th Asia-Pacific Chemical Reaction Engineering Symposium
Date: September 18th
Place: Beijing
Contact: Institute of Process Engineering, CAS

IHEID Graduate Institute APSIA exhibition
Date: September 20th
Place Shanghai
Contact: Swissnex China

Sino-Swiss Journée – University Fribourg & ECNU Shanghai
Date: September 22nd
Place: Shanghai
Contact: Swissnex China

2011 International Seminar on the Dark Component in the Universe
Date: September 26th
Place: Beijing
Contact: Institute of Theoretical Physics, CAS

The 6th China Annual Conference and International Exhibition on Intelligent Transport System
Date: September
Place: Beijing
Contact: Intelligent Transportation Society of China

2011 International Conference on Frontier of Nano Science and Technology ICFNST
Date: September 28th to 29th
Place: Kunming
Contact: www.icfnst.org