



Research and Environment News from China

Number 16 - October 2005

Please note that the previous newsletters can be downloaded from the Website of the Embassy of Switzerland in China: www.eda.admin.ch/beijing . To subscribe/ unsubscribe or send us your comments, please send an eMail with the corresponding subject to ziwen.zhu@eda.admin.ch.

Introduction

This month, China has illustrated the development of research with a number of successes. The most famous one is obviously the successful **flight to space** of the new Shenzhen VI spacecraft. A large number of new technologies have been developed by China for Shenzhen VI, in cooperation with Japan and the USA, in various fields, digital cameras, satellite telecommunications, new materials (900 new materials!), dehydrated vegetables, space breeding, etc.

It appears that a world-class new material has been developed by the Changchun Research Institute of Applied Chemistry; it has developed a new **polyacrylamide chemical product** with potential use in **sewage treatment**.

In health research, China is intensively increasing the financing of research. In the field of **AIDS** research, its budget is **USD 100 mio**. Research is successful: China found which gene causes leukemia.

In the field of health, due to intensive press coverage and daily evolution of **bird flu**, our news on this topic are moved on a frequent basis from this newsletter to our website www.eda.admin.ch/beijing.

Finally, we would like to remind that **FP6** –in its last phase- has open topics that could potentially finance research cooperation between Switzerland and China (FP6 also finances Chinese researchers).

Science & Technology

KEYWORDS

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| 1. Second manned spacecraft successfully takes off | <i>Shenzhou VI spacecraft</i> |
| 2. Shenzhou VI Lands Safely After Successful Mission | <i>Shenzhou VI spacecraft</i> |
| 3. Space-age technology seeps into everyday life | <i>space technology</i> |
| 4. Scientists Finish Measuring 8th Largest Desert | <i>desert measuring</i> |
| 5. New Dinosaur Species Discovered | <i>dinosaur species</i> |
| 6. China develops world-class new materials for sewage treatment | <i>sewage treatment</i> |
| 7. CAS-MPG Partner Institute for Computational Biology opens | <i>Computational Biology</i> |
| 8. China aims to operate 'super-efficient' nuclear reactor in 2010 | <i>nuclear reactor</i> |

Environment

KEYWORDS

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| 1. Water issues to be tackled | <i>water resources</i> |
| 2. Beijing plans against winter air pollution | <i>air pollution</i> |
| 3. Effect of greenhouse gases up 20 percent since 1990 | <i>greenhouse gases</i> |



- | | |
|---|---|
| 4. Computers consume half power generation of Three Gorges | <i>computers,
electricity consume</i> |
| 5. Environmental taxes mean healthier China | <i>environmental taxes</i> |
| 6. China to draft new law to tackle energy headaches | <i>energy security</i> |
| 7. China has huge potential in hydroelectric generation | <i>hydroelectric generation</i> |
| 8. CAS Guangzhou Institute of Energy Conversion wins BlueSky award | <i>renewable energy</i> |
| 9. A new antiarrhythmic agent developed by CAS scientists | <i>antiarrhythmic agent</i> |

Health

KEYWORDS

- | | |
|--|---|
| 1. China expects to keep HIV carriers within 1.5 million by 2010 | <i>HIV carriers</i> |
| 2. HIV insurance debuts in Henan Province | <i>HIV insurance</i> |
| 3. China to invest over 100 mln dollars in anti-AIDS campaign next year | <i>anti-AIDS investment</i> |
| 4. Chinese researchers find the cause of leukemia | <i>leukemia</i> |
| 5. China mulls law to ensure safety of farm products | <i>agricultural products
safety</i> |
| 6. Over 60% of depression patients not undergone treatment | <i>depression patients</i> |
| 7. Over 7% of Chinese age 65 or above | <i>population aging
problem</i> |

Activites coming up soon

November 1-4, 2005	
INTERNATIONAL CONFERENCE ON CIRCULAR ECONOMY AND REGIONAL SUSTAINABLE DEVELOPMENT	
Venue: Xizi Guest Hotel, Hangzhou	
Contact : Mr. Bing Zhu International Coordinator Secretariat of 2005CERSD	
Tel: 0571-85106941	Fax: 0571-85172009
Email: 2005cersd@163.com	http://www.2005cersd.org.cn
November 7-8, 2005	
Beijing International Renewable Energy Conference 2005	
Venue: The Great Hall of the People, Beijing	
Contact: Mr. Mu Xiongbing, Mr. Wan Qian (for Government Delegations)	
Tel: 0086-10-51665898 or 68501341	Fax: 0086-10-84064862 or 68501971
Email: apecsmesa@vip.163.com , wangwh@mx.cei.gov.cn	
Contact: Qin Haiyan and Wang Zhongying (for others)	
Web: www.birec2005.cn	
Email: birec2005@birec2005.cn	
Tel: 0086-10-64228218 or 62180145	Fax: 0086-10-64428215 or 62180142



November 8 -11, 2005
World Recycling – Shanghai' 05
International Conference & Exhibition on Car, Electronics & Battery Recycling
Venue: Hotel Shangri-La, Pudong
Contact: Ms. Jeanette Duttlinger
Tel: +41 62 785 10 00 Fax: +41 62 785 10 05
Email: info@icm.ch Website: www.icm.ch
November 20-22, 2005
2005 international forum for environmental legislation and sustainable development
Venue: Friendship Hotel, Beijing
Contact: Mr. Liu Jin Mr. Ge Chen Miss. Zhao Aihua
Tel: +0086-(10)-65257203, +0086-(10)-65257204 Fax: +0086-(10)-65257215
Email: zxem@npc.gov.cn
June 28-30, 2006
Wind Power Asia 2006- The 3rd Asian Wind Power Exhibition and Conference
Venue: China World Trade Centre, Beijing, China
Tel: 86-10-68360959, 68360575 Fax: 86-10-68360949
Email: marcowang@unique-expo.com
April 28 - 30, 2006
The 7th China International Environmental Protection Exhibition and Hi-New Technologies Conference
Venue: Shanghai International Exhibition Center
Tel: 021-54592323 Fax: 021- 54253480
Email: zmes@zhongmao.com.cn
Contact: Mr.Jiang Zhiyou 13370228868
January 15-16, 2007
The 4th International Workshop on Energy and Environment of Residential Buildings (IWEERB 2007)
Venue: Harbin Institute of Technology
Contact: Mr.Zhi Weiluo
Tel: 86-0451-898 60889 Fax: 86-0451-8628 2123
E-mail: iweerb2007@hit.edu.cn

Environment-related international tenders and investment opportunities:

english.cepi.com.cn/homepage/homepage.jsp

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Science & Technology

Second manned spacecraft successfully takes off

(Chinadaily, 2005-10-12)

China's piecemeal but ambitious space program took another giant step today, as two Chinese taikonauts blasted into orbit on a state-of-the-art Long March rocket on the country's second manned space mission ever.

The Shenzhou VI manned spacecraft blasted off with a loud launch noise for a multi-day orbital stay from its satellite launch center in Jiuquan in northwest China.

China's state-owned Central Television Station is carrying out a live coverage of the spacecraft flight, with images of the two taikonauts clearly shown to tens of millions of Chinese viewers.

Shenzhou VI was lifted into the space by a Long March carrier rocket at 9:00 am Beijing Time. It entered its orbit 21 minutes later.

Fei Junlong, 40, and Nie Haisheng, 41, will make a great deal of experiments during their space journey.

"I feel good," Fei said minutes after blast-off.

"We have the confidence and ability to fulfil this glorious task. Our only wish is to make the mission a complete success," Fei said before boarding the craft. "Life in space is full of mysteries," Nie added.

"There is nothing to worry about," the two was quoted as saying before the launch as a light snow fell. "We will accomplish the mission resolutely. See you in Beijing."

Premier Wen Jiabao hailed the successful launch, reiterating China's policy for peaceful use of space.

Wen said that China develops space technology purely for peaceful purposes and China is willing to cooperate with other nations in the development of space science and technology.

The launch came just a day after the ruling Chinese Communist Party wrapped up a key meeting to map out the development of the world's seventh-largest economy for the next five years.

In the Chinese capital, President Hu Jintao and Vice President Zeng Qinghong watched the lift-off at the Beijing Aerospace Command and Control Center.

China's first man in space was Colonel Yang Liwei, who orbited Earth 14 times in the Shenzhen V craft on October 15, 2003.

China, the third nation to put a man into orbit, insisted ahead of the launch that its aspirations in space were strictly peaceful and that it opposes deploying weapons there. Space officials say they hope to land an unmanned probe on the moon by 2010 and launch a space station.

"We do not wish to see any form of weapons in outer space, so we reaffirm that our space flight program is an important element of mankind's peaceful utilization of outer space," Foreign Ministry spokesman Kong Quan said.

However, Washington sees China's space ambitions as an emerging security concern, with the potential for the Asian giant to boost its military capabilities and eventually challenge US dominance in space.

"US concern about China's space capabilities are first that China might eventually develop the ability to attack US satellites, because the US military is heavily dependent on them," said Phillip Saunders of the Pentagon-linked Institute for National Strategic Studies.

"Second, as China space capabilities improve, it will have the ability also to improve its other military options," Saunders told AFP.



Shenzhou VI Lands Safely After Successful Mission

(Xinhua News Agency, 2005-10-17)

Shenzhou VI's reentry capsule, carrying taikonauts Fei Junlong and Nie Haisheng, landed safely at 4:33 AM this morning, marking a "complete success" for China's second manned space mission after it put the first Chinese national in space two years ago, said top legislator Wu Bangguo.

"The successful mission is of great significance for elevating China's prestige in the world, promoting China's economic, scientific and national defense capabilities and consolidating national cohesiveness," he said at the Beijing Aerospace Command and Control Center.

He described it as a "milestone" in China's space technology development and in its manned scientific experiments in space.

Both taikonauts are "in fine condition," doctors said after their physical checkups upon landing. They landed just 1 km away from the preset spot after a 115 hour 32 minute space flight, more than five times the length of China's maiden manned space flight.

Fei and Nie stepped unaided down the ladder from the capsule and were seated for a while to receive a bouquet of flowers and get used to Earth's gravity.

"We feel fine," said a smiling Fei. Nie, who had spent his 41st birthday in space, thanked the Chinese people for their "concern and support." Both waved flowers to the excited crowd.

They were later given Chinese herbal tea and food before being flown on two Super Puma helicopters to a nearby airport where they will head for Beijing by special plane.

The mission has gripped the nation, and television pictures showed parents of the two taikonauts burst into tears when they saw their sons emerging from the spacecraft.

"We can have a final laugh," Liu Yu, commanding chief of the rocket system, told Xinhua News Agency. "It was a mission perfectly fulfilled."

President Hu Jintao was present at the Beijing Aerospace Command and Control Center to watch the lift-off on Wednesday and talked with the taikonauts on Saturday, and Premier Wen Jiabao was at the launch site to see them off.

Shenzhou VI flew 3.25 million kilometers in space, orbiting once every 90 minutes 343 km above the Earth at a speed of 7.9 km per second.

Fei and Nie conducted a series of firsts for China on the spacecraft, including maneuvers between the orbital and reentry capsules, putting on and taking off spacesuits, using the space toilet and the self-administered blood pressure tests.

During China's first manned space flight, Yang Liwei never left his seat in the reentry capsule nor did he take off his spacesuit. That mission made China the third country to launch people into space after Russia and the US.

Space-age technology seeps into everyday life

(China Daily, 2005-10-18)

Astronauts Fei Junlong and Nie Haisheng ate, slept and read as comfortably aboard Shenzhou VI as they do on terra firma because of space technology.

And that same technology has relevance to everyday life in China, which is only one benefit from the space programme.



In 2003 when SARS (severe acute respiratory syndrome) threatened the lives of hospital staff who were on the frontline in the fight against the deadly disease, the Astronaut Centre of China played a role.

It designed a special cooling waistcoat based on its spacesuit technology so that nurses and doctors wearing heavy anti-virus uniforms didn't have to be tortured by high temperatures.

And people who want to filter out more words amidst noisy conditions can thank audio technology in the spacesuit that helps them better understand a speaker.

In the parade to celebrate the 50th anniversary of National Day in 1999, communications between tank drivers and tank forces were constantly interrupted until spacesuit headphones reduced extraneous noise effectively, said Li Tanqiu, director of the spacesuit research office of the centre.

"The development of spacesuits involve nearly all technologies used for preventive and protective purpose, and these technologies will have wider use in other sectors," Li said.

Other technologies developed for space exploration are now a feature of everyday life.

Beijing-based Outlook Weekly described some examples in its latest edition:

Digital cameras: Space scientists developed digital cameras in the 1960s to transmit pictures from outer space to the earth using satellite signals. Japan's Sony Company later developed the device into a consumer product.

Satellite technology: Satellite telecommunications has provided more than 100 kinds of service to human beings to improve such areas as phone calls, data transmission, telecasts, televised education, mobile telecommunications, rescue operations and medical data sharing.

Upgraded medical appliance: The image-enhancing techniques developed by US scientists in the Apollo moon-landing programme have been used in the image processing in medical equipment such as Computer Tomography and nuclear magnetic resonance.

New materials: The special conditions of living in outer space, characterized by microgravity, a need for cleanliness and being in a vacuum, provide an ideal place for producing new materials.

Statistics show that of 1,100 kinds of new materials developed by China in recent years, 80 per cent have benefited from space technology.

Dehydrated vegetables: If you eat instant noodles, you will find a small bag of dehydrated vegetables in the package. That was produced during the Apollo moon-landing programme to enable astronauts to eat vegetables in outer space.

Space breeding: Under the influence of space rays, the genes of crop seeds carried by spacecraft were changed. As a result, some new crops with high yields will be bred.

Incomplete statistics show that more than 800 kinds of seeds have undergone in-space breeding experiments by retrievable satellites since 1987 in China.

Experiments show that these crops have made remarkable progress in producing bigger fruit containing more nutrients and with a higher ability to resist pests.

Outlook Weekly quoted Professor Han Liyan of the Beijing University of Aeronautics and Astronautics as saying that every 10 yuan (US\$1.23) invested in the aerospace industry has generated 80-140 yuan (US\$9.87-17.30) worth of benefits.

China's direct investment in the sector has exceeded 10 billion yuan (US\$1.23 billion) each year. The total scale of China's aerospace industry is now estimated at 120 billion yuan (US\$14.8 billion).



New Dinosaur Species Discovered

(Xinhua News Agency, 2005-10-27)

Chinese geologists have discovered a fossilized dinosaur belonging to a species first discovered in the world in Lanzhou Basin, northwest China's [Gansu Province](#), and named the dinosaur Lanzhoumagniden.

Based on the research by Gansu Provincial Geology and Minerals Bureau and the Chinese Academy of Geological Sciences as well as the authentication by the [Chinese Academy of Sciences](#), Lanzhoumagniden is regarded to belong to a new dinosaur species, living on the earth about 100 million years ago, which has been discovered in the world for the first time. Naming of the dinosaur was announced recently.

Lanzhoumagniden is a kind of plant-eating dinosaur with huge teeth, with the single biggest tooth being 14 cm long and 7.5 cm wide, the biggest known in the world, said Dr. Li Daqing, a research fellow with the No. 3 Geology and Minerals Prospecting Institute of the Gansu Provincial Geology and Minerals Bureau.

Li said, the dinosaur's lower jaw is one meter long, with 14 tooth slots on each side and a single tooth slot is four cm wide, claiming this has also been discovered for the first time in the world.

Judging from its huge jaw and ribs, Li and his colleagues estimated the dinosaur to be 10 meters long and 4.2 meters high, weighing 5,500 kilograms and walking on four feet and sometimes on two feet.

Initial research shows that Lanzhoumagniden is in close link with the *Lurdusaurus arenatus* of the early Cretaceous period discovered in Africa, both of which belong to the *Styracosternans* species.

Discovery of the Lanzhoumagniden expands the geological distribution of *Styracosternans* from Africa to Asia, indicating a close relationship between the African and Asian continents, Li said.

Li and his colleagues first discovered a three-toed footprint of a dinosaur at the Liujiaxia of Yongjing County in 1999 and found a series of footprints of dinosaur in the region later.

They discovered a group of dinosaur footprints, each 150 cm long and 120 cm wide and each step 375 cm long, in the area in September 2000.

In the following two years, Li and his excavation team began exposing fossilized footprints of dinosaurs, uncovering about 1,500 square meters of dinosaur footprints.

To further uncover the relationship between the footprints and dinosaurs, Chinese geologists carried out a survey of fossilized dinosaur skeletons in the Lanzhou Basin, dozens kilometers away from Liujiaxia, where the footprints were found.

They discovered a comparatively intact fossilized dinosaur coccygeal vertebra in the Lanzhou Basin, providing an important clue to the discovery of the Lanzhoumagniden.

During the following excavation in the basin, they uncovered 103 dinosaur fossils, including lower jaw bone, cervical vertebra, back bone, coccygeal vertebra, ischium and pubic bones of a Lanzhoumagniden.

Based on the analysis of properties of rock and deposit, distribution of stratum and fossils of ancient organism, Chinese paleontologists concluded that during the era of the Lanzhoumagniden, Lanzhou Basin was an inland freshwater lake and there was a group of ancient island on the southeast part of the lake. Lanzhou Basin was then located in the sub-tropical region, with warm and humid climate, lush pasture and rich terrestrial organism.

Discovery of the Lanzhoumagniden is of high scientific value in the study of the geographical environment and geologic periods in the Lanzhou Basin and nearby areas in ancient times, Li said.

A research report on the dinosaur by Li and experts with the Chinese Academy of Sciences has been published on the English version of the *Geological Bulletin of China* in September.



Scientists Finish Measuring 8th Largest Desert

(Xinhua News Agency, 2005-10-24)

China's eighth largest desert, the Kumtag, measures 22,917.2 square kilometers, according to scientists who have just returned from a month-long expedition across the Kumtag.

This is the first time for Chinese scientists to measure the exact size of the Kumtag, which is located between Lop Nur in Xinjiang Uygur Autonomous Region and Dunhuang of Gansu Province and sandwiched between two mountain ranges: the Tianshan Mountains on the north and Altun Mountains on the south.

A team of 15 scientists participated in the expedition, the first full-scale scientific expedition across the desert, said Wang Jihe, a researcher with Gansu Provincial Sand Control Institute and head of the expedition.

The scientists, representing Gansu Provincial Sand Control Institute, Chinese Academy of Forestry Science and Lanzhou University, walked more than 5,000 kilometers across the desert and used remote sensing satellite images, coupled with results of field surveys, to work out the precise area of the desert, said Wang.

They also collected more than 500 samples of desert animals and vegetation and at least 1,000 first-hand geological data, discovered two stratum sections that have proven valuable to scientific research, and provided evidences to support further study on the desert's geological conditions, soil, vegetation, climate changes and changing river and lake systems.

Underneath the Kumtag's sand and rock, the scientists found clear signs of a vast dried-up lake. Wang said the team collected more than 100 samples of the stratum and hoped further analysis into the samples may tell how the rise of the Qinghai-Tibet Plateau induced climate changes in the arid northwest, how Kumtag came into being and how Lop Nur, once a vast lake, kept shrinking and dried up entirely in 1972.

The expedition team also spotted 25 wild two-humped camels, a critically-endangered species, in the central part of the desert. According to Ma Muli, a forestry official in Jiuquan city of Gansu, Kumtag is home to about 260 of the camels. "Most of them have moved here after the Lop Nur dried up," said Ma, who is also guide for the expedition team.

Very little is known about the Kumtag, whose name means "sand hill" in Uygur. As its name suggests, the desert has the toughest natural conditions in northwest China's arid region.

China develops world-class new materials for sewage treatment

(People's Daily Online, 2005-10-04)

China has recently developed world-class high-molecular-weight polyacrylamide products which can be used for sewage treatment, paper making and oil exploitation.

The products were developed by the Changchun Research Institute of Applied Chemistry under the Chinese Academy of Sciences in Changchun, capital of northeast China's Jilin Province.

According to experts from the institute, the new materials, up to international criteria, are in conformity with the development trend of green chemistry.

The new products require simple production techniques and cause no second-time pollution.

Application tests showed that the new product dissolved in 10 minutes without floating agglomeration, which could greatly enhance the efficiency of sewage treatment and dehydration.

In recent years, local governments have attached great importance to the treatment of industrial waste water and domestic sewage. It is believed that the new materials will benefit sustainable economic growth in China.



CAS-MPG Partner Institute for Computational Biology opens

(CAS news, 2005-11-02)

<http://english.cas.ac.cn/eng2003/news/detailnewsb.asp?infoNo=25722>

A new antiarrhythmic agent developed by CAS scientists

(CAS news, 2005-11-02)

<http://english.cas.ac.cn/eng2003/news/detailnewsb.asp?infoNo=25718>

China aims to operate 'super-efficient' nuclear reactor in 2010

(www.physorg.com, 2005-10-05)

<http://www.physorg.com/news6987.html>

Environment

Water issues to be tackled

(China Daily, 2005-10-06)

Major problems related to China's water resources are expected to be solved step by step in the next five years to improve the nation's water supply, flood-control, food security and ecosystem rehabilitation.

Water authorities have set a target for this sector during the period of the 11th Five-Year Plan (2006-10), Wang Shucheng, minister of water resources said recently.

He was optimistic about the further developments within the water resource sector.

The country faces five water-related challenges today worsening floods, droughts, water shortages, soil erosion, pollution and insufficient rural water infrastructure, he pointed out.

However, "further developments within the sector can back up the nation's efforts to build a well-off society by tackling water issues," he said this week in a speech for an ongoing international congress on irrigation and drainage.

By 2010, "we will reinforce institutional development and optimize water resource allocation throughout China by setting up a system of controlling water consumption with quota management," he said.

Top priority of water supply will be given to the security of drinking water. Ninety-eight per cent urban residents and 60 per cent of rural residents will get access to safe, clean water.

A decade-long water shortage has plagued major cities across North China and East China's Shandong Peninsula, this will be relieved once the first phase of the South-to-North Water Diversion Project is completed.

It is the most ambitious attempt yet by China to transport water from the Yangtze River in the south to the thirsty north.

"By then, we will settle the problem of drinking water security, an issue that has plunged 80 million rural people into chronic poverty in China's remote areas," the minister said.

To improve grain production capacity, water-saving irrigation will be increased on 10 million hectares of land with key large irrigation areas either renovated or upgraded.



He made it clear that China will realize a nil growth in water consumption for irrigation by increasing the efficiency of water used for agriculture.

Farming irrigation still consumes 66 per cent of China's total water supply due to backward irrigation techniques or equipment.

In the south, draining capacity of major grain-growing bases will be further improved to withstand the worst waterlog in three to five years.

Water quality in over 65 per cent of sections of major rivers and lakes serving as key water supply sources will be improved according to State criteria, with at least 95 per cent of headwater sites used for urban water supply to be kept unpolluted.

Furthermore, authorities will rehabilitate rivers with fragile ecosystems through controlling water and soil erosion.

In the following five years, the ministry will further reinforce flood-control systems with the operation of frequently used flood detention basins ensured either to mitigate damages or manage floodwaters to be used as resources.

Beijing plans against winter air pollution

(Xinhua news agency, 2005-10-10)

The Municipal Environmental Protection Bureau has made an emergency plan to prevent heavy air pollution in Beijing's winter, said vice director Du Shaozhong here Sunday.

The plan was made after wide consultations with government departments and companies and it will be launched when there emerges heavy air pollution for two consecutive days.

According to the plan, the government will organize special street cleaning and sprinkling work when it is in effect and factories with huge pollutant emission will be ordered to reduce their production.

As of Sunday, Beijing has seen 190 days with blue sky this year, eight days more than the same period last year.

But Du said "Viewing from the weather changing trend in Beijing's past few winters, the situation is not very promising."

He said air pollution in Beijing is growing increasingly complex and the emergency plan is important to cope with the plight.

The official said the bureau will pay especial attention to curbing smoke pollution from burning coal for heating use in the winter.

High quality coal with low sulphur and ash content will be recommended to be used for heating in the winter and the municipal government will also invest in replacing coal with cleaner fuels in small furnaces.

Effect of greenhouse gases up 20 percent since 1990

(People's daily on line, 2005-9-28)

The effect of greenhouse gases in the Earth's atmosphere has increased 20 percent since 1990, showed the Annual Greenhouse Gas Index (AGGI) released Tuesday.

The index was set to a reading of 1 as of 1990, and it is now up to 1.20, indicating a 20 percent increase of carbon dioxide, methane, nitrous oxide and chlorofluorocarbons (CFCs) in the air, said the Climate Monitoring and Diagnostics Laboratory (CMDL), of the US National Oceanic and Atmospheric Administration.

The greenhouse gases, mostly from industrial activities, can help trap solar heat in the air, leading to global warming.



"The AGGI will serve as a gauge of success or failure of future efforts to curb carbon dioxide and other greenhouse gas increases in the atmosphere both by natural and human-engineered processes," said David Hofmann, CMDL director.

In the current reading, for every million air molecules there are about 375 carbon dioxide molecules, two methane molecules and less than one nitrous oxide molecule. The CFCs, a key factor responsible for the depletion of the protective ozone layer, make up less than one molecule in a billion in the atmosphere.

The greenhouse gases produce an effect known as radiative forcing, which is a shift in the balance between solar radiation coming into the atmosphere and Earth's radiation going out. Radiative forcing is calculated from the atmospheric concentration of each contributing gas and the per-molecule climate forcing of each gas.

The radiative forcing index is expected to be updated in each April.

Computers consume half power generation of Three Gorges

(People's Daily Online, 2005-10-10)

By the end of 2004, China has had 52.99 million personal computers, which consume nearly 20 billion kilowatt hours of electricity a year, or half of the power generation of Three Gorges power station.

The amount is half that of Beijing's annual consumption.

Under normal energy-saving condition, computers use more than 100, 000 kilowatt hours of electricity per day, which is the power generation of a small thermal power plant.

A Pentium-4 computer uses 0.15 kilowatt hour of electricity per hour, or, averagely, a computer needs one kilowatt hour on every business day.

Sources say, the products of Founder, Great Wall and Tsinghua Tongfang, etc. have been granted the energy-saving certificate by China Standard Certification Center but most products on the market are not within the standard.

Environmental taxes mean healthier China

(China Daily, 2005-10-15)

During its 25 years of reform, China has made impressive progress in the transition to a market economy. Much of the production and distribution in China is managed through the market, and the efficiency of this mechanism is evident in the country's sustained rapid growth.

While the market is good at many things, however, it is not good at everything.

One place in particular where the market breaks down concerns the use of natural resources and the environment, particularly where some important resource is freely available. While China's record of production and gross domestic product (GDP) growth is fantastic, its record of environmental protection is not so good.

Air and road space are good examples of free resources that the market will tend to over-exploit unless the government takes some corrective measures. A number of different approaches to protecting precious resources can be taken, but one of the most effective ones is the use of environmental taxes and prices for natural resources.

The prices of coal and oil in China are, to some extent, market prices in that they reflect the cost of extracting or acquiring these resources. However, coal and oil are different from many other goods in that the burning of fossil fuels has negative consequences on the environment. While the prices of oil and coal in China cover the cost of acquiring them, they do not take into account this environmental damage.

The heavy air pollution in China has serious health consequences and economic costs. The World Bank estimates that air and water pollution together cost China each year about 8-12 per cent of the GDP.



Because the users of energy do not pay these costs themselves, they tend to overuse energy resources.

This is exactly the reason why many countries have imposed energy taxes. China has a tax on petroleum products, but it is very low compared with the United State or Europe.

Taxes on oil and gas are very effective at getting households and firms to use less energy. In China, heating the typical apartment takes twice as much energy as the same apartment in Japan or Europe.

Regarding traffic congestion, putting a higher environmental tax on energy, as discussed above, would help with congestion - especially if some of the money collected is used to finance public transportation, including metros and dedicated bus lanes.

But traffic congestion is not likely to be solved only through higher energy prices. Roads in the city are a scarce resource, and yet it is freely available to everyone.

London recently took an innovative approach to congestion: It introduced a steep fee for any private car that drives into the inner city on a work day. This basically takes a scarce resource - road surface in the inner city - and puts a price on it for users. The result was immediate: Private car use in the inner city dropped sharply; people made more use of buses, metro, taxis, walking, and riding bikes - and consequently, there was much less congestion and a nicer environment for everyone.

Pricing is also effective in tackling the water issue.

China does not have a lot of water available per person. Moreover, the water is not distributed evenly.

Water prices have some similarity to energy prices in China. They are "market prices" in the sense that they cover the cost of getting water from rivers and reservoirs to farms, households, and firms, but the prices generally treat the original water as a free product. As a result, the price of water in China tends to be very low compared to other countries.

Because water is inexpensive, there is not much incentive to recycle it. So, 70 per cent of industrially used water is discharged untreated back into rivers. As a result, all the major river systems in China are seriously polluted.

One measure that would help is to price water more realistically at the source - the river or reservoir - recognizing that it is a scarce resource. This would result in users making more effort to conserve water and to recycle it.

Charging higher taxes and prices for environmental goods that are being over-exploited is an obvious idea that would make China's development more resource-efficient. It is natural then to ask who opposes this idea and who loses from it?

China as a whole should only gain because higher environmental taxes can be offset by lower taxes elsewhere. Unlike a decade ago, China's overall government revenues are now adequate, and there is no urgent need to raise more taxes. So higher environmental taxes could mean lower taxes on, for instance, labour, which would help reduce unemployment.

Poorer regions in China may well gain from higher resource taxation.

In China, the revenues of resource taxes go to the province, and many of the poorer provinces are rich in natural resources. Higher resource taxes would mean that these provinces could generate more revenues, which they could spend on putting more children in school and building better infrastructure.

All of the current owners of cars would be hurt by a tax on petrol that leads to higher prices. But they would also get some benefit if revenue from the taxes is used to improve public transportation and reduce traffic congestion.

In the case of urban water prices, a common concern is that higher prices will hurt the poor. But most of the subsidy from low water prices does not go to the poor. The best way to help the poor is through direct income support so that the poor can buy all of their basic needs.

A final point about opposition to environmental taxes and prices: It is often more popular to introduce price increases gradually.



This can be good policy, but it is smart to announce changes well in advance, even if they are implemented gradually. If the government announces that petrol prices will go up 10 per cent per year for the next five years, people and firms will start planning ahead and buying homes, appliances, machinery, and cars that use less energy.

This is exactly what the government wants.

The author is the World Bank's country director for China.

China to draft new law to tackle energy headaches

(People's Daily Online, 2005-10-22)

China expects to draft a law within two years that will ensure its energy security, a senior energy official said.

The efforts were regarded as a major step to strengthen the country's energy-related legislative foundation and help sustain growth in the years to come.

"We need a general law to ensure our energy security and we are buried in the efforts," said Xu Dingming, energy bureau head under the National Development and Reform Commission.

Xu said "the meat of the law" is likely to include principles of energy saving, cleaner utilization and security, which have been repeatedly emphasized by China's highest leadership in drafting the country's blueprint for the next five years.

A team of experts and officials from the National People's Congress (NPC), the top legislature, and the State Council have already assembled twice to discuss preparations for legislation, said Xu, who is also the deputy office director of the State Council Energy Leading Group, headed by Premier Wen Jiabao.

But experts said the lawmaking is a real challenge as "specific laws related to energy have already been prepared."

"So it's very easy to find that specific laws will conflict with the future energy law, which will reflect more of the latest changes," Zhang Jianyu, a visiting scholar with Tsinghua University, told China Daily.

China has had specific laws such as the Law of Electricity, the Law of Coal and the Law of Oil, and the Law of Energy Saving in force for years. And the Law of Renewable Energy will take effect next year.

"We will face a round of amending once the planned energy law has been drafted, passed by the NPC," Zhang said.

But Zhang added "there is something more important than just legislation" when discussing China's energy challenges. "Personally speaking, the top priority ahead is to find convincing data to show how serious our challenges are."

China has finished its initial oil reserve assessment by two high-profile expert groups, one from the China Academy of Engineering, which was entrusted by Premier Wen, and the other from Xu's commission.

But Xu said drafting the energy law is pressing because it will offer a legal foundation for such activities as setting up strategic energy reserves.

Coal law revision

Revising the Law of Coal was regarded as another major measure to solidify China's energy legislative foundation.

"We will finish the amendment draft at the end of this year," said Huang Shengchu, president of the China Coal Information Institute. "Expert teams have discussed it several times."

Huang's institute is responsible for drafting amendments. According to China's legislative process, the draft amendment will be submitted to the Legislative Affairs Office under the State Council for approval. Then the amended law will be examined and approved by the NPC.



Huang said the law will raise market entrance requirements for mine operators and force operators to treasure resources. It should also require them to spend more on safety measures.

Huang used the government's low resource utilization fee as an example. At present, the government charges mine owners just 1,000 yuan (US\$120) annually for 1 square kilometre of mineral field. "It's too cheap," he said. "The government should raise that by a big margin."

China has huge potential in hydroelectric generation

(People's Daily Online, 2005-10-24)

China, with the most abundant hydro-electric resources in the world, has a potential hydro-electricity generating capacity exceeding 400 million kilowatts, said Gu Hongbin, an expert with the China Hydroelectricity Project Consulting Group on Saturday.

Gu made the remark at a high-level seminar on China's hydroelectricity development and environmental protection.

By the end of 2004, China's installed capacity of hydro-electric generators was 100 million kilowatts, only accounting for 24.6 percent of the total installed capacity in the country, Gu said.

The installed capacity of thermal-electric generators by the end of 2004 reached 320 million kilowatts, accounting for 73.7 percent of the total, according to Gu.

As most of China's power plants are thermal-powered, which heavily pollute the environment, the country needs to make all-out effort to develop renewable hydroelectric resources so as to meet the domestic demand of electric power, he said.

Figures show that hydroelectricity accounts for 63.3 percent of the total power consumption in Norway, and 38.6 percent in Brazil.

The installed capacity of hydro-electric generators will reach 165 million kilowatts in five years, and 250 million kilowatts by 2020, 26.3 percent of the total expected installed capacity, according to estimates.

CAS Guangzhou Institute of Energy Conversion wins BlueSky award

(CAS news, 2005-11-02)

<http://english.cas.ac.cn/eng2003/news/detailnewsb.asp?infoNo=25738>

Health

China expects to keep HIV carriers within 1.5 million by 2010

(People's Daily Online, 2005-10-25)

If with active, effective measures and adequate funds, China is expected to keep the number of HIV carriers within 1.5 million by the year 2010, said Dai Zhicheng, an expert on AIDS control with the Ministry of Health,

Dai made the remarks at the first China International Forum on Sexual Medicine held in southwest China's Chongqing municipality, Oct. 22.

"China is expected to keep its HIV-infected population within 1.5 million if effective measures, adequate funds and scientific mechanism are put into place," said Dai, "otherwise the figure may reach 10 million by that time."

China now has about 840,000 HIV-positive people since the first case was reported in 1985, including 80,000 AIDS patients.



By the end of June 2005, there had been 126,808 officially reported HIV carriers and 28,789 AIDS patients. An HIV epidemic on the rise has become a severe threat to public health.

Funds of several billion yuan have been put into AIDS control by central and local governments in recent years, said Dai.

HIV insurance debuts in Henan Province

(China Daily, 2005-10-31)

ZHENGZHOU: An insurance company in Central China's Henan Province has launched a new policy that guarantees compensation of up to 300,000 yuan (US\$37,050) in case of HIV infection.

According to the policy offered by the Henan Provincial Branch of China Taiping Life Insurance Co, policyholders will pay an annual premium of 12.9 yuan (US\$1.6) to secure a 10,000 yuan (US\$1,235) payout if they are infected with HIV during the year.

Each policyholder can pay up to 387 yuan (US\$48) in annual premiums for a total insured amount of 300,000 yuan (US\$37,050).

Taiping Life was authorized by the China Insurance Regulatory Commission in early October to launch the HIV insurance programme nationwide, said Peng Dahua, an executive with the company's Henan branch.

Peng said that, as a group insurance product, the policies are designed principally for companies, hospitals and law enforcement organizations to buy for their staff, rather than for individuals.

By the weekend no one had yet signed up to the policy, according to Peng.

The policy exempts certain groups including haemophilia patients, drug addicts, victims of nuclear radiation and those who have received blood transfusions from illegally acquired blood products, or who are infected as a result of medical malpractice.

Homosexuals are fully covered by the policy, Peng said.

Peng's company chose Henan Province for the new product because it is one of the areas of the country worst affected by HIV and AIDS, he added.

According to health department statistics, 25,036 people were confirmed HIV-positive and 11,815 developed AIDS by 2004.

China to invest over 100 mln dollars in anti-AIDS campaign next year

(People's Daily Online, 2005-10-27)

Chinese Vice Health Minister Wang Longde said Thursday in Suzhou that China's 2005 financial input in the fight against HIV/AIDS will be no less than last year's 830 million yuan (103.75 million US dollars) and the figure is expected to be higher next year.

Speaking at the Oct. 26-28 International Symposium on ODA (Official Development Assistance) for Population and Development, Wang said China is working on next year's AIDS budget and the figure of 830 million yuan only represents the central government's share without adding local governments investment and international organizations assistance.

He also said non-governmental organizations (NGOs) should, under the guidance of the government, play a greater role in the anti-AIDS campaign as the epidemic, mainly transmitted through unsafe sex behavior, fails to be checked by legal restrictions or government work alone.



The Chinese government will invest in training staffers or volunteers out of the high-risk groups, such as sex workers or men have sex with men, to advocate AIDS prevention and control.

China reported more than 120,000 HIV infected cases and nearly 30,000 AIDS patients by last June, with over 7,000 of them dead. The figures are expected to be updated around World AIDS Day that falls on Dec. 1.

Chinese researchers find the cause of leukemia

(People's Daily Online, 2005-10-27)

World-renowned haematological journal Blood has published on its website the findings of a research group with the Second Hospital Affiliated with the School of Medicine of Zhejiang University, in east China's Zhejiang Province.

The group found that leukemia is caused by the human gene PTPN11, encoding Shp2, and their discovery has drawn wide attention from the world medical circles.

Leukemia, or blood cancer, is a common but destructive malignant tumor in human hemopoietic system.

The incidence of leukemia is the highest among tumor diseases among the youth.

According to Dr. Xu Rongzhen with the Department of Hematology of the hospital, the research group analyzed leukemia patient cell samples, leukemia cell systems of multiple types of people as well as the PTPN11 sequence in the blood cells of normal people. They also studied the expression of Shp2 tyrosine phosphatase and their function system.

They found PTPN11, encoding Shp2, shows abnormal distribution and over-expression in leukemia cells.

In normal blood cells, Shp2 protein is in cytoplasm, but in leukemia cells, that are elevated in large number into the inside plasma membrane and nucleolus.

Such a location struck the researchers that Shp2 might become a new therapeutic target of leukemia.

Xu said, the finding will help provide new countermeasures for leukemia, but there is still a long way to go before producing an effective medicine.

China mulls law to ensure safety of farm products

(People's Daily Online, 2005-10-23)

China's top legislature, the Standing Committee of the 10th National People's Congress (NPC), deliberates on the draft law on quality safety of agricultural produce for the first time during a six-day session commencing in Beijing Saturday.

Quality safety of agricultural products is closely related to public health, safety and the growth of agriculture and rural economy in China, says Minister of Agriculture Du Qinglin, when explaining the draft to the NPC Standing Committee.

Xu Xiaojun, an official with the Ministry of Agriculture (MOA), said, of the total 381 major food-poisoning incidents reported by Ministry of Health in 2004, 140 were caused by poisonous animals and plants. The absence of law caused great difficulties in preventing these incidents from happening again.

Du said quite a number of policies and measures have been taken in recent years to ensure safety of farm products, including building better bases of agricultural products and improving daily food provisions for the public.

The law on quality safety of agricultural products is to provide the legal status to these policies and measures that have proved to be very effective, acknowledged Du.



Xu said China's agriculture had gone from quantity-oriented to quality-oriented since the State Council's decision to develop productive agriculture in 1992. According to a 2004 MOA survey done in 37 Chinese cities, 97.5 percent of the vegetables in the market reached CAC international standards in terms of pesticide remnant.

However, the quality safety of agricultural produce have undergone a bottleneck phase over recent years, manifested in the reversal of safety indicators and occasional food-poisoning emergencies.

The legal absence of agricultural products may account for the inability of quality and safety supervision, said Xu, thus the law is called for.

Statistics from the Ministry of Commerce showed that China's agricultural produce encountered export technical trade barrier in recent years, with 90 percent of agricultural and food exporting companies being affected. Their total loss amounted to approximately 9 billion US dollars every year.

Xu noted that some countries set these technical trade barriers, taking advantage of China's legal gap in this aspect.

The draft law comprises five parts including, among others, defining the scope of agriculture products adjustment, establishing a quality security set-up and improving the quality safety supervision system for agriculture produce, according to Du.

Over 60% of depression patients not undergone treatment

(Xinhua News Agency, 2005-10-10)

The number of depression patients in China recently exceeded 26 million, about 60 percent of whom never go to the hospital, according to China Mental Health Association.

Activities aiming to increase public awareness of depression and its treatment were launched in Beijing, Shanghai and Guangzhou Monday.

Cai Zhuoji, director of China Mental Health Association, said that among depression sufferers in China, less than 10 percent get proper medical treatment.

The diagnosis and medical treatment rates of depression in local hospitals are also very low, acknowledged Cai.

The association will organize experts to educate hospital doctors around the country about depression.

Ten to 15 percent of depression sufferers commit suicide, and anywhere from 50 to 70 percent of the suicides or attempted suicides in China have been attributed to the cause of mental depression.

Over 7% of Chinese age 65 or above

(Xinhua News Agency, 2005-10-10)

More than seven percent of China's total population age 65 or above, which has posed a big problem to the country's work for the aged, said a senior Chinese official Sunday.

"The aging problem has come around not only somewhat earlier but also developed rapidly," said Hui Liangyu, vice premier of the State Council, or the Chinese cabinet.

Currently, the number of the Chinese who age 60 or above has accounted for more than 10 percent of the total Chinese population, said Hui, who made the remarks when paying a visit to a local beadhouse to mark the coming traditional Chinese "Sept. 9" festival (in lunar calendar), a special day for respecting the old which falls on Oct. 11.

"The aging issue will bring about deep impact on the economy, society, culture and other fields of China," he said, citing the issue as of strategic importance which will influence the country's overall economic and social development.

"We should study and introduce more policies so as to solve the problems rendered by the aging issue and form an atmosphere that stresses respecting and loving the old," he said.



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Federal Department of Foreign Affairs

Embassy of Switzerland in China
Environment, Science, Technology, Health section

Noting the thousand-year-old custom as one of the key virtues left from ancient China, Hui said letting the old enjoy the fruits of China's development is an important part of the ongoing process of building a comprehensively well-off society in China.