



The Auto Project on Energy and Climate Change  
汽车能源与气候变化—中国项目

# MONTHLY NEWS BRIEFING

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**AUTO/ENERGY/POLLUTION**

**Volume IV, Issue 12, December, 2007**

*The APECC monthly newsletter is prepared by the  
Innovation Center for Energy and Transportation (iCET)*



## TABLE OF CONTENTS

<b>GENERAL ENERGY ISSUES .....</b>	<b>4</b>
China eyes closer co-op with US in energy development.....	4
China vows to develop clean energies .....	4
Nuclear power to fuel Shandong's development .....	5
Reform of the energy pricing system crucial.....	7
Sustainable energy plan .....	8
Coal price rise hits electricity producers .....	8
An alternative source of energy .....	9
<b>AUTOMOBILE AND TRANSPORTATION.....</b>	<b>11</b>
China Mobile to focus on big users.....	11
Rush hour fee system gears up.....	11
Automaker tie-ups a complex network in China.....	12
Apply the brakes on gas-guzzlers.....	13
New traffic blueprint encouraging .....	14
Cleaner energy for Beijing cars.....	15
First hybrid sedan off line.....	15
<b>OIL AND GAS .....</b>	<b>16</b>
Sinopec to complete refinery by January.....	16
National center for oil reserves established.....	17
Oil output to climb 1.5 percent .....	17
Local fleets to grow for imported oil .....	18
Saving food for clean energy .....	19
60b yuan tax bill for oil .....	20
China to prevent coalbed gas blasts in 2008.....	20
<b>CLIMATE CHANGE AND AIR POLLUTION.....</b>	<b>21</b>
Translate climate talk into action.....	21
Chinese gov't attaches important to climate change .....	22

Firms may have to reveal green details .....23  
Humans can ward off climate threat .....24  
Green issues reshaping business strategies .....26  
Air-sea interaction lab opened to analyze climate change.....27  
Fund urged for green expertise transfer .....27

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**iCET Beijing Office:**

Mr. Vance Wagner  
Managing director  
Phone: 86-10-65857324 ext. 202  
e-mail: [dvwagner@icet.org.cn](mailto:dvwagner@icet.org.cn)  
Room 1904, e-Tower Building  
No.C12 Guanghua Rd.  
Chaoyang District 100020, Beijing

**iCET USA Office:**

Dr. Feng An  
President and Executive director  
Phone: 626-844-7439  
e-mail: [fengan@icet.org.cn](mailto:fengan@icet.org.cn)  
[www.icet.org.cn](http://www.icet.org.cn)  
[www.autoproject.org.cn](http://www.autoproject.org.cn)

## General Energy Issues

### China eyes closer co-op with US in energy development

December 11 (Xinhua)--China and the United States might see more opportunities for trade by boosting joint energy development, Minister of China's National Development and Reform Commission (NDRC) Ma Kai said Tuesday.

"There could be great potential and fat opportunities for both countries in improving coal efficiency and promoting clean energy," Ma said ahead of the high-profile China-US Strategic Economic Dialogue, which opens Wednesday.

Ma urged the two sides to find new ways for joint energy development, saying the United States had advanced technologies and experience to improve coal efficiency and develop clean energy, which were valuable to China.

The Chinese government had been promoting the use of a variety of cleaner energy sources to reduce its reliance on coal, as well improving its energy efficiency and pollutant control.

His remarks also came as the two countries signed a slew of agreements, including pacts on energy cooperation, at the 18th China-US Joint Commission on Commerce and Trade (JCCT) Tuesday.

One of the 14 documents was a memorandum of understanding on cooperation of biofuel development signed by the NDRC and the US departments of agriculture and energy.

"As two of the world's largest consumers of oil, this document may help reduce each country's dependence on imported oil, benefiting both US and Chinese consumers," the US Department of Agriculture said in a statement released at the JCCT.

Ma said earlier Tuesday that the Chinese side would work out executive plans, and wished to start work soon.

China is promoting development of biofuels with financial support, as the country saw biofuels as environmental-friendly energy sources.

Ma hoped both countries would also launch initiatives "as soon as possible" to implement a memorandum of understanding signed in September, which outlines cooperation in upgrading industrial energy efficiency.

Tuesday's JCCT also saw US firm Peabody Energy become an equity partner in China's "GreenGen" project, the country's first near-zero emissions coal-fueled power plant with carbon capture and storage.

Ma said the NDRC had drawn up a guideline with dozens of suggestions on cooperation in power generation, coal, petroleum and natural gas, renewable energy, as well as energy conservation and environmental protection, in a bid to boost joint energy development.

"Joint energy development between the two countries would be mutually beneficial," he said, adding it would not only help China improve energy consumption structure, reduce greenhouse emissions and cut pollutant discharges, but could also bring commercial benefits to the US side.

The commission said China would lift the proportion of renewable energy consumption to about 10 percent by 2010, and to 20 percent by 2020.

China would focus on development of hydropower, bio-mass energy, wind power and solar power in the future, according to a medium and long-term plan for renewable energy published by the NDRC in September.

Almost 70 percent of China's energy use came from coal in 2006, with other forms of energy each accounting for a tiny proportion.

### China vows to develop clean energies

December 26 (Agencies/Xinhua) -- China promised Wednesday to develop renewable energy for its fast-growing economy, stepping up efforts to promote hydroelectric, nuclear, solar and wind energy, as well natural gas extracted from garbage dumps and coal mines.

In the country's first ever white paper on its energy conditions and policies, Beijing pledged to give top priority to developing renewable energy.

"China's energy development emphasizes thrift, cleanness and safety," says the white paper titled "China's Energy Conditions and Policies".

The share of renewable sources and nuclear power in China's energy consumption rose from 4 percent in 1980 to 7.2 percent last year, according to the white paper.

However, it notes that the energy structure with coal playing the main role will remain unchanged for a long time to come.

China will develop the coal industry in an orderly way, actively developing electric power, expediting the development of oil and gas and improving energy development in rural areas.

"China will pay more attention to the clean utilization of energy resources, especially coal, and make it a focus of environmental protection," it said.

### **Greenhouse Gases Emissions**

It also says that China takes greenhouse gases seriously and will take more measures to reduce its emissions.

"As a responsible developing country, China attaches great importance to environmental protection and prevention of global climate change," it says.

"China aims to achieve the goal of basically curbing the trend of ecological deterioration, reducing total emissions of major pollutants by 10 percent and gain visible results in the control of greenhouse gas emissions," it adds.

It will also push forward structural adjustment, improve energy conservation in industry, launch energy-saving projects and advocate energy conservation in society in effort to promote all-round energy conservation.

China is accelerating its development of a modern energy industry, taking resource conservation and environmental protection as two basic state policies, it adds.

### **No Threat To The World**

The white paper emphasizes that China's energy development will make positive contributions to the world's energy security and stability.

"China did not, does not and will not pose any threat to the world's energy security," it says.

As the world's second biggest energy producer, China has a relatively strong foundation for energy production and supply.

"For a long time China has relied largely on domestic energy resources to develop its economy. The rate of self-sufficiency has been above 90 percent, much higher than that in most developed countries," the paper says.

It notes that with a large population, the per-capita average of energy resources is very low.

The per-capita average of both coal and hydropower resources in China is 50 percent of the world's average, while the per-capita average of both oil and natural gas resources is only about 1/15 the world's average. The per-capita average of arable land is less than 30 percent of the world's average, something which has hindered the development of biomass energy.

### **Nuclear power to fuel Shandong's development**

December 24 (China Daily) -- East China's Shandong Province has the largest number of coal-fired power plants in the country. But soon it will be at the top of another list - nuclear power.

Construction on three nuclear power stations has already broken ground in the province. The first two, Shidaowan and Hongshiding, are in Weihai City, while the other, Haiyan, is in neighboring Yantai City.

Five reactors are initially planned with a combined capacity of more than 4,000 megawatts (MW). The 11 operational nuclear reactors in China now have a total capacity of about 8,000 MW.

Additional Shandong reactors are also on the drawing board. When finished, the sites will comprise the largest nuclear power base in China.

Analysts say it makes sense for Shandong to develop nuclear power as the province needs more electricity to fuel its rapid development.

With environmental protection a pressing issue, Shandong is shutting down small coal-fired power plants. By the end of this year it will have closed plants with a combined capacity of 1,000 MW.

The province has over 800 coal-fired power generating units with a capacity under 100 MW. By the end of 2010, the province will close other small power plants that have a total capacity of 4,000 MW.

As well, as a coastal area, Shandong is suitable for construction of nuclear plants, a source with China National Nuclear Corp (CNNC), the nation's largest nuclear company, tells China Business Weekly.

But some residents in the region argue that having three nuclear projects so close together may threaten the environment. They are also worried about safety.

The CNNC source responds by saying all nuclear projects in China will undergo strict studies before they get government approval.

"Safety is always the most important issue for a nuclear power plant," she says.

CNNC is also beginning development of the Hongshiding nuclear project in Weihai City. The company now is doing preparatory studies that range from safety concerns to environmental protection.

The three nuclear projects will use different technologies developed by China as well as foreign countries.

With a reactor generating 200 MW, the Shidaowan plant will use high temperature gas-cooled technology. China Huaneng Group, the nation's largest power company, will develop the project with China Nuclear Engineering & Construction Corp (CNECC) and Tsinghua University.

Investment in the project will total 3 billion yuan, with Huaneng funding 47.5 percent, CNECC contributing 32.5 percent and Tsinghua University investing 20 percent.

High-temperature gas-cooled reactors have high efficiency and safety characteristics. The nation's first 10-MW high-temperature gas-cooled experimental reactor was designed and

built by the Institute of Nuclear Energy Technology of Tsinghua University and started successful power generation in January 2003.

The Haiyang and the Hongshiding plants will employ pressurized water reactors, which are the most commonly used in China.

The Haiyang project will have two 1,000-MW reactors using the technology from United States-based Westinghouse Corp.

China this July finalized a contract with Westinghouse to use the company's third-generation technology to build four nuclear reactors in the country, two in Haiyang and another two in Sanmen of Zhejiang Province.

The 11 operational nuclear reactors in China all use first- or second-generation technologies. The four reactors at Haiyang and Sanmen will be the first to utilize third-generation technology.

Westinghouse outbid its main competitor, French nuclear company Areva, after two years of negotiation for the four reactors. No financial figures were disclosed in the final contract, but earlier media reports estimated it at \$8 billion.

In November China signed an 8-billion-euro contract with Areva to use the company's third-generation nuclear power technology for two reactors in Taishan in South China's Guangdong Province.

The contract, under which Areva will provide two 1,700-MW reactors, set a record for the French firm.

For the Hongshiding project, developer CNNC has not disclosed which technology will be used, only saying two reactors each with a capacity of 1,000 MW are planned.

CNNC started to build China's first nuclear power plant, Qinshan nuclear power plant phase I, in 1985. The 300-MW reactor in the facility uses the technology developed by China itself.

The company then built Qinshan phase II and phase III. The second phase used domestic technology, while the third employed technology from Canada.

The company now operates seven nuclear reactors in the country.

## **Reform of the energy pricing system crucial**

December 25 (China Daily) -- Rapid economic growth has led to an increasing demand for energy. And as energy prices keep increasing more pressure is being put on supply and demand. The reform of the energy industry, especially its pricing mechanism, has drawn much attention.

The National Development and Reform Commission said recently it was necessary to reform the pricing mechanism of resource products to further improve efficiency. But the reform should be implemented at the right time with due consideration for all concerned.

Energy prices in China are mainly decided and controlled by the government and do not reflect the scarcity of resources and the impact of energy use on the environment. The prices are relatively low and the pricing mechanism is not in line with that of the international market. This has caused serious problems in energy utilization, economic development and environmental protection.

The pricing mechanism is not in line with production and consumption. This has led to the over-exploitation of resources. China's rapid economic growth is mainly built on an economic structure of high-energy consumption and low-efficiency. The waste in exploitation contrasts hugely with the shortage of resources.

At the same time, low energy prices have increased the competitiveness of China's high-energy-consuming, high-polluting and resource-based products, enlarged trade surpluses and exaggerated the pressure on the yuan's appreciation.

The government is now paying great attention to energy conservation and emission reduction. Without reform of the pricing mechanism, the efforts will only achieve half the results. Reform is a matter of urgency.

Reform will mean further price hikes, and as it takes hold, it will affect the producer price and consumer price indices. The pressure of increasing costs on producers will gradually be transferred to consumers. The process, however, will take time.

Though the rise of energy prices will increase pressure on middle and downstream products, its impact on inflation in the short term will depend on the supply and demand of consumer goods. Over-capacity will lessen pressure for price increases, judging by China's current industrial and energy consumption structure.

In the long run, a price lever is still the most effective way to conserve energy and reduce emissions. As long as energy prices are low, enterprises will lack the drive to improve efficiency and cut emissions. The only way to stop high-energy consuming enterprises from expanding is to increase energy costs. It is therefore necessary to reform the pricing mechanism, marketize energy products and let prices guide investment and economic restructuring.

The reform faces a series of tough issues.

First, the supporting measures of the reform are not completed. There is a lack of overall planning and design in the pricing structure of different energy products. For example, coal prices are market-led now but not electricity. China's crude oil prices are in line with the international market but reform of refined oil prices has not caught up.

Today discussions on reform of the energy pricing mechanism are mainly about bringing China's energy prices in line with the international market. But merely stressing this while ignoring the characteristics of the country's energy resources is not a good idea.

If the scarcity of resources and environmental costs are properly considered, China's energy prices may be even higher than the international level, which could attract more imports of energy resources.

Social fairness is also an issue that should be considered. The price hikes that will come with reform will produce different impacts on consumers of different income levels and social groups. Even prices that are in line with the international market will harm the interests of some consumers. Transparent subsidies for certain consumers will help solve the problem. This is also an important part of the reform.

The current way subsidies are granted to producers have led to unfair distribution and

consumption, which does not improve efficiency or promote social fairness.

Compared with other reforms, reform of the energy pricing mechanism will take time because of its importance, complexity and sensitivity. Marketization offers a way.

Any further delay in reform will make us lose important opportunities and increase the cost of sustainable development. Without feasible alternatives, the inefficient use of energy resources driven by the low prices today will mean higher energy prices and a bigger cost to the environment tomorrow.

It is reported that mounting inflationary pressure could slow down our reform of the energy pricing mechanism, if we do not do it now, we will have to bear the costs later.

### **Sustainable energy plan**

December 27 (China Daily)--The first ever white paper China issued yesterday on its energy conditions and policies provides a panoramic view of the changes the country has made and the challenges it will face on energy development.

To pursue sustainable economic and social advancement, policymakers must work hard to ensure aggressive enforcement of an energy strategy that emphasizes thrift, cleanness and safety.

As the fastest growing major economy with the world's largest population, China has understandably caught more and more global attention for its increasing appetite for energy. While the price of oil in the international market is set to break \$100 a barrel, no one can ignore the growth of China's energy demand.

The new energy report cleared up a number of key points of confusion which have fuelled exaggerated concerns over the impact of China's energy need.

China is now the world's second-largest energy producer and consumer and is also undergoing rapid industrialization.

The experience of developed countries does not allow optimism for the prospect of the global

energy supply. If China uses as much energy in per capita terms as developed countries to fulfill its legitimate right of pursuing prosperity and a higher living standard for its people, its 1.3-billion population will surely make the global energy supply too tight.

However, it is important to remember, as the white paper correctly pointed out, that, first, for a long time China has relied largely on domestic energy resources to develop its economy, and the rate of self-sufficiency has been above 90 percent, much higher than that in most developed countries.

Second, though China's energy consumption is growing rapidly, its per-capita energy consumption level is still fairly low. The figures for China's per-capita oil consumption and imports account for only one half and one quarter of the world's average, respectively.

Third, more importantly, China has been and will continue to be keen on energy conservation.

China started energy conservation work in a planned and organized way in the early 1980s and achieved the goal of quadrupling economic growth while only doubling energy consumption by the late 1990s. Now, the country is pressing ahead with the new task to cut the per-unit GDP energy consumption by 20 percent by 2010 compared to 2005.

China's vigorous pursuit of a sustainable energy strategy will make a big difference for its long-term economic growth as well as the global energy prospect.

### **Coal price rise hits electricity producers**

December 19 (China Daily) -- The price of coal used for power plants in China will go up 10 percent next year, an industry group said yesterday.

"The country's major power companies have completed contracts with coal producers for next year's supply. The average increase was 30 yuan per ton," said Liang Dunshi, vice-chairman of the China Coal Transportation & Sale Association (CCTS).

The nation's big electricity and coal producers gathered in Hebei Province's Xianghe this week

to sign coal supply contracts for 2008. The top five power producers have all completed contracts for next year, he said.

The five companies are China Huaneng Group, China Datang Corp, China Guodian Corp, China Huadian Corp and China Power Investment Corp.

Booming demand is pushing up coal prices, said Liang. The nation's power generation will increase 17 percent this year, the CCTS said.

But coal production will only rise 8 percent this year, it said.

Analysts said higher coal prices would put further pressure on coal-fired electricity plants, forcing them to operate at a loss.

Domestic coal-fired power plants are expected to consume 1.3 billion tons of coal next year, half the country's total coal demand, according to statistics.

The 10 percent price rise will add about 40 billion yuan in extra fuel costs for coal-fired power companies, the CCTS said.

Earlier media reports said the country's power producers had called for the government to raise electricity prices. But analysts said price increases are unlikely this year due to the high consumer price index.

Coal pricing has long been a bone of contention between power generators and coal producers. The government in 2004 approved a mechanism linking coal and electricity prices, allowing electricity to move in line with coal price increases.

Under the mechanism, electricity prices could be adjusted if the price of coal rose by more than 5 percent in a six-month period.

Also, 70 percent of coal price increases are transferred to end-users, while power generation firms bear the remaining 30 percent.

The government used the mechanism to raise electricity prices in 2005 and 2006. Liang said there is no timetable for a third electricity price hike under the mechanism.

Coal-fired power plants account for over two-thirds of the nation's installed capacity. Last year, the nation's total generating capacity surpassed 622 gigawatts, an increase of 20.3 percent, according to the China Electricity Council.

Coal-fired power plants account for over 77 percent of the nation's total installed capacity, it said.

The government has vowed to use more clean energy sources in its power sector, such as wind and solar electricity.

### **An alternative source of energy**

December 5 (China Daily) -- China's recent rapid economic growth has created enormous social and economic benefits for its people. In fact, the Chinese government has made the greatest achievement in the history of human rights, lifting almost 400 million people from poverty to live with more dignity and participate in the economic success of the country.

However, this growth has also created new challenges for the government. Two of which are to clean up its pollution and resolve the energy shortage problem.

Hardly a day goes by without there being some commentary in the international and Chinese press on the challenges posed by severe atmospheric conditions in major Chinese cities.

Recently, China Daily carried an article about a plan to remove more than one million automobiles in Beijing in an effort by the government to improve pollution standards for next year's Olympics.

Also, in a recent article in its Asian edition, Newsweek carried a story on the severe smog problem in Hong Kong. Chinese newspapers report that both the central government and regional authorities will now restrict industries that pollute, and consume a lot of energy.

Having lived for many years in a country that is a pioneer in using clean and renewable energy to power its motor vehicles, it is this technology that can contribute to China's adoption of a clean energy model.

The petroleum crisis of 1973, coupled with Brazil's former financial difficulties of not having enough foreign reserves to pay for petroleum imports gave birth to the development of its green renewable energy program and ethanol automobile technology.

This clean energy model has been implemented with great success for almost 35 years. All gasoline used in Brazil contains a 25 percent mix of sugar cane ethanol and about one-third of its automobiles are gasoline free - 100 percent powered by ethanol. Brazil now even requires, by law, a 5 percent vegetable oil mix in all fuel oil in the country.

Although China has instituted a program for E10 gasoline mix - 10 percent ethanol mix - in nine provinces of the country, the steep rise in the price of corn and the amount of energy it takes to produce ethanol from corn has made the task of supplying enough ethanol more difficult.

Using corn to produce ethanol utilizes large quantities of energy to produce energy. These significant corn price increases have also pressured food costs and have provoked consumer dissatisfaction.

China, like the United States, utilizes corn to produce ethanol. Not only is this a less efficient method for producing ethanol, but utilizing corn as a raw material for fuel creates unnecessary competition with the food chain.

Even before the recent sharp rise in the price of corn, the cost of producing one liter of ethanol in Brazil was about 21 cents, while the same liter of ethanol in the United States costs 48 cents and 46 cents in China.

With current corn prices, the cost for producing Brazilian ethanol is only about one-third of the US costs. One of the major savings in utilizing sugar cane is that the waste, "bagaco", leftover from the sugar cane with its juice squeezed out, is used to generate electric energy.

Not only are sugar and ethanol plants in Brazil self sufficient in energy, but they even produce excess energy that are sold to the local grid to supply neighboring power requirements.

Of course, Brazilian conditions cannot be compared to those in China. Although both are continental size countries, with China being

almost one million sq km larger than Brazil, the giant of Asia has almost seven times the population of the giant of South America.

Furthermore, Brazil can easily convert another 70 million hectares of unused land into agricultural production without affecting its existing pastures that raise cattle, or even infringing upon the Amazon Rain Forest.

With foresight, Japan, through one of its trading companies, has joined with ethanol producers in Brazil and the national petroleum company to start building 40 new ethanol plants in that country for its clean energy requirements.

Of course, the new plants will not be able to substitute for all of the country's energy needs. It does, however, make a contribution and a difference, especially to the country's outlook on preserving its environment through the use of a clean energy model.

Rather than spending more of its reserves for dirty energy, China could spend less by using clean energy. With petroleum prices at almost \$100 a barrel, Brazilian sugar cane ethanol is clean, renewable and cheap.

The instability of many of the fossil fuel producing countries and the competition for petroleum resources with its largest trading partners may be other advantages for China to look into ethanol imports.

Present import duty on ethanol in China makes this important energy resource prohibitively expensive to import and thus economically unfeasible. By importing ethanol, China also conserves its precious water resources. Perhaps it is time for this duty to be reviewed.

Anyhow, the import of concentrated sugar cane syrup is possible. Plants can be built in China to convert this imported syrup into sugar and ethanol. This would help create employment, reduce energy costs, and primarily, clean up pollution. Another advantage for China in using this technology would be its ability to sell, rather than buy, carbon credits for air preservation under the Kyoto Protocol.

Written by Charles Tang the chairman of the Brazil China Chamber of Industry & Commerce

## Automobile and Transportation

### China Mobile to focus on big users

December 12 (China Daily)--GUANGZHOU--China Mobile Communications Corporation (CMCC) yesterday revealed it would focus more of its strategy on developing corporate and institutional users, a move likely to attract more partners to boost mobile ubiquity and network efficiency.

"An exclusive policy will not work, we will open our doors wider to telecommunication partners and corporate and institutional users to realize mobile ubiquity," Wang Jianzhou, chairman of CMCC, the world's largest wireless operator by market value and subscribers, said.

The cooperation expansion pledge was announced during the two-day China Mobile Enterprises User Conference & Mobile Information Forum, which ends today.

The event has attracted over 1,000 government officials, experts and executives from corporations such as Microsoft, Nokia, Ericsson, Huawei, ZTE, Motorola and RIM.

A products and services exhibition of those communications giants was also held in conjunction with the forum.

CMCC has already carried out a series of projects to expand its corporate and institutional users. At the primary stage, it conducted pilots in cooperation with government departments.

The top Chinese mobile carrier is joining hands with the Ministry of Construction to establish urban administration information systems in 28 key cities, including Beijing, Shanghai, Chengdu and Yangzhou.

For the securities industry, CMCC is cooperating with the China Securities Regulatory Commission, the Securities Association of China and eight large Chinese securities brokers to promote investment risk education nationwide.

Notable is the "Village-to-Village" project, which aims to build mobile networks with telecommunications partners to cover China's remote rural areas.

During the first half of this year, more than half of the company's new subscribers were from

rural areas, and the total number of rural subscribers for CMCC has so far exceeded 20 million, Wang said.

Xian Weixiong, director of the Guangzhou transportation committee, revealed the city was developing the partnership with CMCC's information transportation management system, which he said would increase efficiency and reduce costs.

"By the end of October, 1,600 buses and all of Guangzhou's 17,600 taxis had installed China Mobile's terminals. We plan to completely cover the city's public traffic and logistics facilities with the system by 2008," Xian said.

### Rush hour fee system gears up

December 27 (China Daily) -SHENZHEN-Authorities here have taken the first step toward introducing a scheme that charges motorists for using downtown roads during peak hours in a bid to alleviate the worsening traffic situation.

Compared with other mainland cities including Shanghai, Hangzhou and Nanjing, which are mulling over similar plans, the Shenzhen government has reportedly gone further, despite considerable differences of public opinion.

"We have just completed the first step. There is no timetable for the launch of the system and we will solicit feedback from local residents," an official surnamed Che at the government body responsible for handling traffic-related issues told China Daily yesterday.

The scheme will be discussed in government meetings before getting public feedback, he said. A survey conducted earlier this month by the news website [www.people.com.cn](http://www.people.com.cn) found that half of the 84,490 people polled supported the scheme, saying the charge could help optimize road usage.

However, 44 percent of the respondents were against the scheme, saying it will raise driving costs but have no effect on the traffic situation.

According to the Shenzhen transportation bureau, the number of cars on the city's roads has been increasing by an average of 15 percent per year, with the total reaching 1 million in March.

Officials reaffirmed the effectiveness of a road-pricing scheme after studying a similar system in Singapore and consulting with experts from the city-state last month.

Singapore's introduction of the scheme in 1975, which has been gradually expanded and improved, has been effective in maintaining an optimal speed of 45 to 65 kph for highways and 20 to 30 kph for arterial roads, experts said.

Official figures for the second quarter of this year showed the average speed of vehicles in Shenzhen is about 30 kph in the morning and evening peak hours.

Li Jian, a lawyer from Shenzhen, said the government should not try to solve its problems by simply copying the practices of other countries and collecting fees.

"The administration raised parking fees in the commercial areas to reduce demand for private vehicles, but it doesn't work. I doubt if this scheme will work either," he said.

He said he hopes the government will attach more importance to urban planning and speed up the construction of subways and the public transportation system instead.

Another resident, Zhang Kun, said the system could be effective, but the government must ensure that it is suitable for the city.

### **Automaker tie-ups a complex network in China**

December 19 (China Daily) -- Partnership with local interests is the only way foreign carmakers can enter the auto-manufacturing industry in China. On paper, the partnership requirement is deemed necessary to protect the local car industry. In application, the Chinese government is effectively prohibiting full equity control.

For foreign carmakers, the primary objective in establishing joint ventures with local interests is to exploit the comparative advantage of local entities in manufacturing parts and components, distribution and after-sales networks.

Along with the increase in the number of partnerships between local carmakers and large foreign auto groups, a complex network of

partnerships has emerged in China. The most prevailing pattern in the Chinese manufacturing industry is the "one-to-many" relationship. As with local companies, foreign carmakers can forge ties with a multitude of local providers.

Three issues are causing disputes in the management of partnerships between local interests and foreign companies.

First, partnership with advanced foreign companies can help local firms enhance R&D and management capabilities, while technological advantages for foreign companies become less apparent.

The primary goal of Chinese companies is improvement of R&D and production capabilities. Hence, there is a high probability that partnerships between local and foreign companies will eventually evolve into competition.

Using R&D capabilities cultivated during partnerships with foreign companies (including Rover, Volkswagen and GM), Shanghai Automotive Industry Corp (SAIC) developed its own vehicle, the Roewe 750, which went into showrooms in May. In the few months it has been on the market, a large number of local consumers have opted for the Roewe instead of buying GM's Buick Lacrosse or Volkswagen's Passat.

Second, if local firm C partners with foreign firm B, there is potential for such partnerships to eventually hurt the competitiveness of foreign firm A. When Volkswagen and SAIC churned out Santana models in 1985 under a partnership deal, there was a lack of production lines, with the localization ratio hovering at 2.7 percent. Thereafter, Volkswagen helped SAIC to build auxiliary production facilities, with the localization ratio rising to 40 percent in 1997, when SAIC became a local partner of GM.

Third, when forming partnerships with more than a couple of local companies, foreign carmakers need to keep their relations with local entities harmonious. After establishing two different joint ventures, one with Beijing Automobile and the other with Dongfeng Automobile, Hyundai Motor used a single distribution channel, resulting in unnecessary competition among its own models.

Foreign firms need to lay a foundation for shared prosperity with local partners instead of

repressing new developments. The former can sustain a technological gap with the latter by transferring technology on a contingent, step-by-step basis. In August 2005, DaimlerChrysler handed over the manufacturing technologies of the Jeep2500 and Jeep2700, models produced jointly with Beijing Automobile, to a subsidiary of Beijing Automobile, and established a joint venture, Beijing Benz. Through the technology transfer, DaimlerChrysler provided Beijing Automobile with an opportunity to develop its own brands, while successfully differentiating its joint venture from Beijing Automobile.

Some foreign companies employ a strategy of controlling technology transfer and repressing the growth of local partners. SAIC asked Volkswagen to purchase the technology for Volkswagen's Santana model (1980), and planned to develop a new vehicle development based on the technology. However, this proposal was rejected by Volkswagen.

In a diversionary action to prevent local partners from running their own development activities, a handful of foreign companies are strengthening their control over joint ventures. JAC severed its 10-year relationship with Hyundai Motor in 2006 as the latter attempted to take full control of the core parts of production and sales.

To prevent the transfer of resources from local partners to rival competitors, foreign automakers need to tighten control of resources, as well as minimize management of risk through diversified investments. Guangzhou Honda devised a strict confidential information protection measure aimed at preventing leakage of information on the 8G Accord to its rival Guangzhou Toyota via Guangzhou Automobile.

Foreign companies also need to reduce their reliance on single local partners or facilities by forming more than a few local partnerships. Toyota prevents competition among its local partners by applying different positioning strategies and sales channels for Crown and Reiz models (made by FAW Toyota) and the Camry (Guangzhou Toyota).

Written by Zhang Shenwei, The author is a researcher with the China Samsung Economic Research Institute

## Apply the brakes on gas-guzzlers

December 06 (China Daily) -- The automobile market has remained robust despite continuous oil price hikes and talk about a new petroleum tax since early this year.

The media especially seems to indulge in the boom more than others - except the manufacturers of course.

The other day, two anchors of an auto news TV show could not contain their excitement when they announced the type of vehicles that were drawing the most attention from potential customers at a recent auto show in Guangzhou. They were none other than SUVs (sport utility vehicles) and MPVs (minivans).

Last year, the production and sale of SUVs enjoyed double digit increases year-on-year in China. The trend has continued this year.

An automobile page of a national media portal made use of the two facts that contradict each other, to illustrate six new brands of SUVs. The report said these "oil-guzzlers" are selling so well that some people do not even mind paying extra in order to be able to drive these new brands four or five months earlier.

To encourage people to buy SUVs, the media spares no effort in glamorizing the fact that owning an SUV is "a must for consumers who pursue a high quality of life".

However, I find this a little disconcerting.

SUVs are notorious for their heavy greenhouse gas emissions and fuel-inefficiency compared to regular cars. Recognizing the drawbacks of SUVs, European countries have discouraged their sales and use on roads.

Owners of SUVs who drive into the center of London now have to pay more fees to park. As London Mayor Ken Livingstone said last year when he proposed the new charge, he was trying "to affect the choices people make in terms of the cars they are buying".

While Spain and Switzerland have joined Britain in levying more fees, other cities in Europe, including Paris and Amsterdam, have also begun deliberations to restrict the number of SUVs on the roads.

Unfortunately, in our society's drive for a so-called "high-quality" of life, many of us, especially media people, overlook the drawbacks of SUVs and other cars that consume a lot more petroleum than regular family cars.

When the media promote SUVs, they seem to be oblivious to the fact that our country is already petroleum-deficient as well as plagued by increasing greenhouse gas emissions. It seems the fact that more than half of the air pollution in the national capital is caused from exhausts from cars does not matter, when they talk about SUVs.

They simply remain unmoved when government as well as civil society leaders from all over the world have gathered in Bali to talk about ways to reduce the effects of global warming and deal with climate change.

The government too, has also been slow to formulate laws, regulations or new taxes to restrict the development and use of SUVs.

Only late last month did the organizational affairs management of the State Council issue a circular requiring the Party and government departments and agencies to take the lead to use environment-friendly, oil-efficient, domestically-manufactured vehicles. On principle, no government organization should use SUVs, except for special needs.

Above all, the circular asks all departments and agencies to cut the government vehicles' petroleum consumption by 20 percent.

The circular has all the right requests, but it will take time and determination to really enforce it and make it effective.

Meanwhile, the media should make louder calls to people that quality of life should not be achieved by aggravating the already polluted air and wasting more fossil fuels.

### **New traffic blueprint encouraging**

December 13 (China Daily) -- When Subway Line 5 opened on October 7, my family took a ride downtown happily.

However, after a few weeks, we started to drive downtown again when the three of us travel together. We take the subway only when we travel alone. We hesitate taking a ride together, because it is very crowded.

Since its opening, the 27.5-km line that links densely-populated Tiantongyuan in the north to areas down south through Dongdan - the heart of Beijing - carries an average of 400,000 passengers daily. It is about 20,000 commuters more than the previously projected maximum number.

With the opening of Line 5, the number of subway commuters in Beijing has increased by 59 percent to about 2.5 million a day on average.

The city's public transport system is still not well connected. The other day, my parents, who live about 14 km southeast of where I live, spent an hour-and-a-half taking a bus and then subway Line 5 to get to my home.

Meanwhile, traffic seems to be getting worse in areas such as Zhongguancun where department stores, book stores, and electronic goods markets are concentrated. Smog was pretty serious over the past weekend.

The sharp increase in the number of subway passengers and continuous traffic congestion only reflects how much Beijing, as well as other big cities in China, need to give priority to the development of public transportation, especially a sound rail and bus system.

I believe whether a city is modern or not is not reflected by how many cars or how many apartments its residents own, but by how extensively it can serve its residents' needs and by making it convenient for them to go about their daily life.

Moreover, as global warming is reaching the tipping point with the odds of reversing it seemingly slim, Beijing should muster up more funding and effort to reduce greenhouse gas emissions. Developing public transport and discouraging the unlimited use of cars is an important strategy.

The happy news is that Beijing has not stopped at Line 5. Work started last Saturday on building or extending five subway lines.

Although there was no glamorous celebration to mark the event, we cannot ignore the fact that today, a total of 10 subway lines are simultaneously under construction in China's capital. It is projected that by 2015, subway lines will stretch about 561 km in Beijing.

Residents will be able to walk about 1,000 m at most to reach any one of the stations within the Fourth Ring Road. Those residing in the satellite cities in the suburbs - Changping, Shunyi, Mentougou, Fangshan, Tongzhou, Yizhuang and Daxing - will be able to reach downtown by rail.

Beijing has come a long way with its subway construction. Between 1969 and 2001, only 42 km of subway lines was completed. Line 1 opened to regular traffic 10 years after it was completed in October 1969.

With the intensive work underway, we only hope that by 2015, most of us will find it easier and more convenient to travel downtown or uptown using public transport.

And hopefully by then, Beijing will be able to reduce exhaust emissions from cars and improve air quality and the environment, as fewer people will feel the need to travel by car.

### **Cleaner energy for Beijing cars**

December 7 (Xinhua)--BEIJING -- Beijing will introduce cleaner energy for automobiles and greatly cut emissions, as air pollution has become a major concern for the city in the preparation for "green" Olympic Games.

From January 1, 2008, automobile distributors in Beijing will have to sell gasoline and diesel meeting the new China IV standards that are equivalent to the Euro IV standards in the European Union, according to Du Shaozhong, deputy director of Beijing Environment Protection Bureau.

It is expected the new standards will reduce the amount of sulphur dioxide pumped out onto the streets of the nation's capital by automobile exhausts by 1,840 tons every year.

Environmental authorities said major distributors including Sinopec and PetroChina are "technically mature" enough to provide China IV

standards fuel and are well poised to first sell the product in Beijing.

The current China III standards, equivalent to the Euro III standards, have reduced sulphur dioxide emissions from automobile exhausts by 2,480 tons annually since it was enforced at the end of 2005, according to official statistics.

To reduce pollutants in emission, some buses in Beijing have already used fuel that meets the China IV standards.

There are 3.1 million motor vehicles in Beijing and about 1,000 to 1,200 vehicles are adding to Beijing's roads every day.

Despite a rapid increase in the number of motor vehicles, Beijing has managed to reduce nitrogen dioxide and carbon monoxide, two main pollutants in exhaust emission, in the air.

Nitrogen dioxide in every cubic meter of air reduced by 10.8 percent between 1998 and 2006, or from 74 gammas to 66 gammas per cubic meter, and carbon monoxide decreased by 33 percent from 3.3 milligram to 2.2 milligrams per cubic meter.

About 40 percent to 50 percent of the major pollutants in Beijing's air -- nitrogen oxides, carbon monoxide and inhalant particulate matter -- come from vehicle exhaust emissions.

### **First hybrid sedan off line**

December 11 (Xinhua) --CHONGQING-- China's first self-produced hybrid-power sedan, the Jiexun-HEV, rolled off the production line on Thursday at a Chang'an Automobile plant in Chongqing. It is expected to be put onto the market soon.

A Ministry of Science and Technology official said the new sedan was developed using China's self-owned intellectual property rights in terms of the engine, hybrid power system and the car as a whole. This marked the mastering of core technologies in hybrid-power system by a Chinese auto enterprise.

Xu Liuping, president of the Chang'an Automobile, said the Jiexun-HEV was a major component of the "electrified automobile program" in the state backed high-tech plan,

known as the 863-Plan. With a development period of six years, the car had finally become a mass-produced model with internationally-advanced technologies.

He said the car adopted a fuel-battery hybrid technology and reduced fuel consumption by more than 20 percent compared with traditional cars. The emission also met the state's standard IV, the highest standard in China.

Xu said that ten Jiexun-HEVs would be donated to the 2008 Beijing Olympic Games to be held in August next year.

Currently in the Chinese market, hybrid cars were mostly imports that had not performed very well in the market due to high prices. Quite a number of Chinese auto plants have been developing hybrid cars but Chang'an was the first to make it possible for mass production.

The price of the new car would be sharply lower than the imported equivalent models, Xu said.

Chang'an Automobile is China's fourth largest auto enterprise. The China Association of Automobile Industry statistics revealed that in the first 11 months the company had sold 772,300 automobiles.

## Oil and Gas

### Sinopec to complete refinery by January

December 25 (China Daily) -- Sinopec Group will complete the construction of a 12.5 billion yuan refinery in Qingdao in East China's Shandong Province by the end of January, a move to further tap rising demand.

The project is designed to process 10 million tons of crude annually. It will produce 7.6 million tons of refined oil per year, a source with Sinopec told China Daily.

Annual sales revenue of the plant is expected to cross 30 billion yuan, said the source, who declined to be named.

Sinopec started construction of the plant in June 2005. It has an 85 percent stake in the plant.

Preparation work for the plant started in the 1990s. The project was approved by the central government in 2004.

At a company meeting last week, Sinopec President Wang Tianpu said work on the plant was going smoothly. It also helped to train a lot of experts for the company, Sinopec said on its website. But it did not say when the project will come on-stream. The source with the company told China Daily it would be January next year.

"The project will boost the company's refinery business as well as increase its market share," Sinopec said on its website.

Analysts said the project will boost domestic refined oil supply. China, the world's fastest growing economy, wants to increase oil processing capacity by 25 percent by 2010 to meet rising demand for fuels and petrochemicals.

PetroChina, the nation's biggest oil producer, is poised to increase oil-refining volume by nearly 12 percent this year, according to its senior officials.

The company is expected to process some 120 million tons of oil this year, Liu Hongbin with PetroChina told China Daily earlier.

In October and November, facing shortages, top Chinese oil producers Sinopec and PetroChina were running at full capacity and trying to draw on stockpiles as much as possible.

Earlier this month, the government gave the go-ahead to Sinopec to start with Kuwait Petroleum Corp the groundwork on an oil refinery and chemical project in South China's Guangdong Province.

The proposed ethylene plant in Nansha in Guangdong will produce 1 million tons of the chemical a year. The approval allows the partners to start feasibility studies on the project.

The Nansha complex, with a planned investment of \$5 billion, would be the largest joint venture in China, exceeding the nearby Nanhai petrochemical facilities built by Royal Dutch Shell Plc and China National Offshore Oil Corp.

Sinopec this month signed a contract with the Iranian oil ministry on the development of the Yadavaran oilfield in southwestern Iran.

The initial estimate of the project's cost is about \$2 billion. It will be carried out in two phases.

## **National center for oil reserves established**

December 19 (China Daily) -- A center to manage the country's strategic oil reserves was set up yesterday, the top economic planning agency said.

It will serve as the administrative body for the nation's oil reserve system and take charge of stockpiling crude and releasing reserves, a statement from the National Development and Reform Commission (NDRC) said.

The center will also monitor oil supply and demand on the domestic and international markets, and enhance China's energy security, it said.

Han Xiaoping, an energy analyst with Beijing Falcon Pioneer Technology Co Ltd, said: "A sound oil reserve system will help offset oil supply risks when there is an interruption.

"It will also reduce the impact of fluctuating global oil prices on the domestic market."

China is the world's second-largest oil consumer after the United States.

The country imported 145 million tons of crude and 36 million tons of refined oil last year, figures from the General Administration of Customs showed.

It began to build strategic oil reserves in three coastal provinces in 2004.

The first batch comprised four bases, in Dalian, Qingdao, Ningbo and Zhoushan.

The bases in Ningbo and Zhoushan began stockpiling last year, while the other two are expected to start operations within a year, sources close to the project told China Daily.

By the end of 2010, China plans to have 12 million tons of strategic oil reserves, NDRC sources said. Current strategic oil reserves are put at between 2 million and 3 million tons.

NDRC Vice-Minister Chen Deming said earlier that by 2010, China's oil reserves will be equivalent to one month of net imports of crude oil.

By 2020, the volume will have increased to the equivalent of three months' imports, he said.

Last month, the authorities started to develop a strategic oil reserve in the Wanzhou district of Chongqing Municipality. It will form part of the second phase of the national strategic oil reserve plan.

NDRC sources said that on completion of the second phase, the country will have capacity for 28 million tons of oil reserves.

Authorities in several provinces, including Guangdong and Hainan, are currently in discussions with the central government to build strategic oil reserves in their regions.

Han said the central government will not limit strategic oil reserves to the eastern region.

## **Oil output to climb 1.5 percent**

December 21 (China Daily) -- China's crude oil production may rise 1.5 percent this year, according to the China Petroleum and Chemical Industry Association.

Oil output may climb to 186 million tons in 2007, and increase to 189 million tons next year, said Meng Quansheng, the association's vice-president.

China's dependency on imported oil will be about 47 percent in 2008, he said.

International oil prices will range between \$80 and \$90 a barrel next year, the association said.

Zhao Wenzhi, director of the Research Institute of Petroleum Exploration & Development, affiliated with the China National Petroleum Corporation, told China Daily earlier that the country will try its utmost to keep its annual oil imports below 60 percent of its total oil consumption by 2020.

"Currently China's oil production is rising to its peak season, which may last 30 years," he said.

Zhao predicted that China's oil output might reach 200 million tons by 2020. And the production volume will remain unchanged for a long period.

Demand for oil is estimated to hit 450 to 600 million tons in China by 2020.

"We will try to produce 40 percent of the oil we need by then," he said.

Meeting the domestic production target of 2020 requires more local exploration and production, obtaining oil from overseas assets, oil trading and raising energy saving, he said.

As a clean-energy option to supplement oil, natural gas will play a more important role in meeting the country's energy demand.

China's natural gas output may rise 14 percent to 58.55 billion cubic meters this year and increase to 76 billion cubic meters in 2008.

China plans to boost its natural gas production by 50 percent by 2010 to meet increasing demand.

The nation's gas production will be 90 billion cubic meters in 2010. Natural gas will then account for 5.3 percent of the nation's total energy consumption, according to industry insiders.

China's natural gas demand is projected to reach 140 billion cubic meters in 2010.

### **Local fleets to grow for imported oil**

December 17 (China Daily) -- China's fast-expanding oil tanker fleet is expected to shoulder half of the transportation of imported oil by 2010, experts have said.

Luo Ping, a researcher with the Institute of Comprehensive Transportation (ICT) affiliated to the National Development and Reform Commission, said domestic shipping companies have been encouraged to expand the oil transportation market in the past years to help guarantee economic security.

Recent studies by the ICT showed that Chinese-operated tankers should transport at least 60 percent of imported oil to ensure supplies. But domestic tankers last year shipped only 16 percent of oil imported by China, ICT figures showed.

"Based on our studies, we recommended in 2000 that it should be a long-term goal to have 60 percent of China's imported oil shipped by domestic companies by 2015," Luo told China Daily.

The country imports more than 130 million tons of oil each year, about 90 percent of which is transported by ship. It has made China, the world's second largest importer after the United States, vulnerable to transportation costs and other uncertainties such as war.

Given the huge potential of the market, almost all major domestic shipping companies have rolled out ambitious plans to expand their fleet.

"Major shipping companies have all carried out plans to increase oil transportation capacities," Luo said.

Almost all of China's major shipping companies have set a target of at least doubling their current imported oil transportation capacity by the year 2010.

The China Ocean Shipping (Group) Company (COSCO), for example, said it planned to have an oil transportation fleet totaling 10 million deadweight (dwt) tons by the year 2010, up from the current 5.07 million dwt tons.

The expanded fleet will be able to transport 35 million tons a year, accounting for more than 15 percent of China's imported oil transport in 2010 and up from the current 8 percent, said COSCO vice-president Zhang Liang.

"We have already placed orders to build new tankers totaling 2.4 million dwt tons. The rest will be achieved through rents and more purchases," Zhang told China Daily.

Another major player, China Shipping Development Co Ltd's Tanker Company, said it planned to expand its oil transportation fleet to a scale of 8.5 million dwt tons in 2010 through buying and renting, up from the current 3.9 million dwt tons.

The general manager of the tanker company, Mao Shijia, said the firm has orders for new tankers of 3.5 million dwt tons.

The expanded fleet, including at least 12 to 14 very large crude carriers, will help the company take up around 15 per cent of China's imported

oil transportation market, up from the current 5 percent, Mao said.

Both companies forecast that domestic shipping companies will be able to transport 50 percent of China's imported oil in 2010.

At the same time, the authorities have expressed some concern that their new oil tankers are not flying Chinese flags.

The deputy director of the Water Transport Department of the Ministry of Communications, Zhang Shouguo, said the ministry would prefer more Chinese ocean-going ships to fly Chinese flags instead of flags of convenience.

Zhang said the country needs to have better command over shipping to safeguard economic interests.

To that end, the ministry has introduced a two-year policy granting tax exemption for ships of certain types - including oil tankers between four and 12 years old in July this year - if they come back and register at home.

### **Saving food for clean energy**

December 14 (China Daily) -- The government is set to increase the use non-food products to make bio-fuel to strike a balance between food security and the growing demand for energy. To ensure that, it has changed its bio-fuel policy, banning any new plants from using corn.

It will subsidize demonstration projects producing ethanol from non-staple products such as cellulose, sweet sorghum and cassava, or making bio-diesel from forest products. It will make it easier for such projects to get bank loans, too.

Projects that are up to approved industrial standards will be rewarded with 20 to 40 percent of their total investment, the deputy director of the Ministry of Finance's Department of Economic Development, Zeng Xiao'an, has said. Also, bio-fuel producers who lose money when crude oil prices fall will get flexible subsidies.

Previously, supportive policies used to be reserved for the four approved corn-based ethanol producers, which got a 1,000-yuan

subsidy for every ton of ethanol they produced. They enjoyed deductions in their sales tax, too.

"The new policy of making bio-fuel from non-food products signals a major change in shifting production resources," says Kuang Tingyun, of the Chinese Academy of Sciences. The country has to chalk out a pragmatic bio-fuel strategy, taking its biomass and major technological breakthroughs into consideration. "The lack of arable land means bio-fuel cannot rely on food products."

Experts favor the use of crops such as cellulose, sweet sorghum and cassava to make bio-fuel because they can be grown even in the arid and desert areas. Forest products, including tung-oil and coral trees, are also "ideal raw material" for the bio-fuel industry, says on-field market analyst Cao Zhi.

The incentives offered are not bad because farmers can get a 3,000-yuan (\$405) subsidy for each hectare of forest products used to make bio-fuel, and 2,700 yuan for each hectare of crops.

Technological breakthrough is a must to advance the bio-fuel production process if non-food products are to be used because China lags behind other countries in productivity and efficiency, experts say. In China, for instance, 12 tons of water is needed to make one ton of ethanol from corn, but in the US, producers can do with only 1.8 tons, says an AT Kearny report on China's bio-fuel industry. Moreover, in China, 3.3 tons of corn is needed to make one ton of ethanol, whereas in the US only 2.8 tons is suffice.

Kuang says the government should change its subsidy policy on the four existing corn-ethanol producers because they are finding it difficult to get enough corn. The Tianguan Group in Henan Province is already using cassava to make 20 percent of its 300,000 tons of ethanol a year.

The four corn-based bio-fuel plants were set up in 2001 because the country then had a large corn reserve. But the sharp increase in industrial use of corn and the subsequent increase in its global demand have created a shortage of the cereal in the domestic market, which in turn has driven up pork and other food products' prices.

Bio-fuel is fuelling a new market expansion as China tries to raise its ethanol production from 1

million tons a year to 2 million tons in 2010, and 10 million tons by 2020. China National Cereals, Oils and Foodstuffs (COFCO) will be the major investor in the sector because it has stakes in three of the four corn-based ethanol producers.

Last year, a COFCO bio-fuel department plan showed that three bio-fuel projects, using mainly cassava, will go into operation in 2008, and will have an annual output capacity of 800,000 tons. Plus, a 200,000-ton capacity factory in the Guangxi Zhuang Autonomous Region, will start running by the end of this month .

Other energy giants such as Sinopec and PetroChina aim to get a big share of the bio-fuel market, too, because they are the main organizations that will eventually mix bio-fuel with oil before it is transported to gas stations.

### **60b yuan tax bill for oil**

December 7 (China Daily) -- China will charge the nation's oil producers 60 billion yuan in taxes this year on their windfall from soaring crude prices.

That is 33 percent more than the 45 billion yuan Chinese oil producers paid last year, the National Development and Reform Commission (NDRC) said in a statement on its website yesterday.

Windfall tax payments reached 41 billion yuan in the first three quarters of 2007, the NDRC said.

China introduced the oil levy in March 2006 as crude prices advanced, charging oil producers the additional tax on each barrel of oil they sell for more than \$40. Crude oil in New York climbed to a record \$99.29 a barrel on November 21.

The government would use the windfall tax payments to subsidize refiners and other industries whose fuel costs have surged, the NDRC said. The government controls fuel prices to prevent inflation from accelerating. Refineries in China have been running at a loss after crude prices gained.

China paid 21 billion yuan of such subsidies last year and payments so far this year have reached 42 billion yuan, the NDRC said.

PetroChina Co, Sinopec and CNOOC Ltd are the nation's three biggest oil producers. PetroChina and Sinopec are also the nation's two biggest refiners.

### **China to prevent coalbed gas blasts in 2008**

December 25 (Xinhua)-- BEIJING -- China will do more to prevent coal-mine gas blasts next year, after an explosion in north China killed 105 people earlier this month.

This year, China reported 898 deaths in 236 such accidents from January to November, according to information presented during a work conference of the colliery gas accident prevention panel held on Monday.

There were 57 fewer accidents than in the same period last year, down 19.5 percent, and the death toll was down 312 persons or 25.8 percent, according to the panel, which was set up to improve the safety record of the industry.

But prevention remained difficult, as shown by recent accidents, the meeting heard. Participants at the meeting cited the deadly accident that claimed 105 lives in north China's Shanxi Province.

China would approve no mines with a capacity of less than 300,000 tons next year, the meeting decided. Small coal mines have been a major source of hazards due to poor safety facilities and slack management.

The panel pledged to work to prevent gas accidents through tougher regulations and enforcement in 2008.

The country should also start extracting coalbed methane from mines as an industry, because the gas was a prime cause of explosions when left in place, the panel heard. Production of coalbed methane is hampered by a lack of technology. The meeting decided that China would set up two national engineering research centers for this purpose and plan to run 10 demonstration projects.

China had invested 3 billion yuan (\$405.4 million), raised through treasury bond issues, into coal mine gas accident prevention work annually over the past three years, according to Zhang Guobao, Vice Minister of the National Development and Reform Commission and also head of the prevention panel.

## Climate Change and Air Pollution

### Translate climate talk into action

December 20 (China Daily) -- The year 2007 will go down in history as the year that climate change took center stage in almost every major development forum around the world. As noted by the United Nations Secretary-General Ban Ki-moon, climate change has become the defining issue of our time, set to transform the very way we live and the way our economies are structured.

In the past two weeks, world leaders gathered for the summit in Bali where initial negotiations on a new international climate agenda have recently concluded. What the world needs is a breakthrough: a comprehensive climate change agreement that all nations can embrace. We must set an agenda - a roadmap to a better future, accompanied by a tight time-line that reaches a deal by 2009.

World leaders, experts and civil society representatives met in Bali to start discussing a "post-Kyoto" framework for future emission reduction, which would take effect in 2012 when Kyoto expires. The second major point of discussion was on technology transfer - with calls for new arrangements to help support the proposed shift to a low carbon world economy.

According to the Intergovernmental Panel on Climate Change, the scientific body that recently shared the Nobel peace prize, if no action is taken on reducing emissions in the near future, the planet's temperature could rise by 4.5 C or more.

While such figures may not seem that much, consider this: the Arctic is warming twice as fast as the global average and could lead to rapid melting of large ice sheets including the massive ice sheets which overlay much of Greenland. The risk of these sheets slipping into the ocean

by century's end is real, and would utterly transform the world we know today.

The world ecosystems act in a non-linear manner, and there is increasing concern that we are nearing a tipping point, when rapid changes could begin to take shape at an accelerated rate.

Of particular importance are the findings of the IPCC, and UNDP's global 2007/2008 Human Development Report, that the poor, who have the lightest carbon footprint and bear little responsibility for the ecological debt borne by the planet, are the most vulnerable and will be hit the hardest by global warming

These are very alarming facts, but we must not miss their optimistic bottom line: We can turn the tide of global warming - in ways that are both affordable and promote prosperity.

Much is made of the fact that China is poised to surpass the United States as the world's biggest emitter of greenhouse gases in a decade.

Less well known, however, are its increasing efforts to confront environmental challenges. China will invest \$10 billion in renewable energy this year alone, second only to Germany. At a recent summit of East Asian leaders in Singapore, Premier Wen Jiabao pledged to reduce energy consumption (per unit of GDP) by 20 percent over five years - not so far removed, in spirit, from Europe's commitment to a 20 percent reduction in greenhouse gas emissions by 2020.

In China, the year 2007 saw the launch of China's first-ever National Climate Change Program. The recently issued national climate change policies and the momentum of the Bali conference now provide a major opportunity for the country. For example, China is already a world leader in solar and wind power. With the right incentive framework and an expansion of "green investment" into China, the future may see China producing technologies that help the world not only China, to meet its green technology needs.

What is needed now is to quickly scale up financing, technology transfer and public-private partnerships to get the job done. South-South cooperation is therefore critical. China, India and other emerging economies can together find solutions.

There are already good cases of local entrepreneurs taking the lead to innovate and bring to the market new solutions. The challenge now is to identify these models, scale up these activities and expand their reach into the market.

This is very much the role of the United Nations. As the UN moves ahead toward the follow-up from Bali, the UN family in China is also working closely with the government and our private and civil society partners to identify China specific challenges to mitigation and adaptation, and new technologies and financing to address these issues.

The momentum from Bali holds a great opportunity for the future. China's ability over the next several years to innovate and show leadership on climate change can become a great source of economic opportunity, and can help find global solutions to our common challenges.

Simple things can make a big difference if done at scale. Shifting from regular lighting to energy efficient lighting or from regular refrigerators and air conditioners to energy efficient ones - these can make a huge impact.

The UN is pleased to have worked over the past decade in China on such matters and is now in the process of supporting further activities like these with our partners at National Development and Reform Commission (NDRC), the State Environment Protection Administration (SEPA) and various local partners. Of particular importance is the strong role we see for the private sector, both Chinese and international.

As a follow-up to Bali, and to support these efforts in the future, the United Nations in China will soon launch with key government partners a new UN-China Climate Change Partnership Framework (CCPF).

This will be a landmark partnership between nine UN agencies and about a dozen ministries and private sector partners to bring to bear the best knowledge and technologies to the table.

One important part of our work will be to bring together global partners to identify post-Kyoto strategies and solutions. There is a wealth of practical solutions out there that needs to be piloted and then scaled up where possible.

Technology will be key. There are new cutting-edge "green technologies" that can be applied to these challenges, new approaches and best practices that the UN can share with China. Bringing knowledge and new technology solutions stand as core elements of our new UN Climate Change Partnership Framework initiative.

The UN will bring together leaders and innovators in this field to share knowledge, within China and between China and other emerging economies, and explore practical solutions in the form of new green investment mechanisms and new green technology transfer mechanisms.

The program will explore steps towards a lower-carbon economy, ways to mainstream climate change into sustainable production and consumption models, and how to innovate energy use through practical solutions like green lighting and distributed localized energy production.

We also have to engage citizens on these issues through expanded awareness raising activities. UNDP was pleased to partner in July with Al Gore's Live Earth concert in Shanghai to bring attention to climate change issues.

We are happy to now be launching a series of awareness raising activities with NDRC, SEPA and local partners to bring to citizens across the country ways in which they can make a real difference in their daily lives. There is a growing sense that citizens can themselves make a difference and that they have a strong role to play.

Written by Khalid Malik, the United Nations resident coordinator and UNDP resident representative in China

### **Chinese gov't attaches important to climate change**

December 12 (Xinhua) -- Bali - A senior Chinese official said on Wednesday that the Chinese government attached great importance to the issue of climate change.

Xie Zhenhua, deputy head of the China's National Development and Reform Commission (NDRC), made the remarks at a high-level

segment meeting of the UN Framework Convention on Climate Change (UNFCCC) in Bali, a resort island of Indonesia.

Xie, who is heading China's delegation to the UN climate meeting, said that in pursuing its economic development, China has been undertaking a series of policies and measures to address climate change and to protect the environment in accordance with the country's sustainable development strategy, and has achieved tremendous achievements."

He said that by restructuring its economy and improving energy efficiency, China has saved 800 million tons of coal equivalent energy in the period from 1990 to 2005 and avoided 1.8 billion tons of CO<sub>2</sub> emissions.

"China's 11th Five-year Plan for the Economic and Social Development also clearly sets the targets of making achievements in controlling GHG emissions and reducing its per unit GDP energy consumption by 20 percent by 2010 over that of 2005," he added.

"China also formulated its National Climate Change Program, further elaborating the guidelines, basic principles, detailed objectives and key areas of mitigation and adaptation. This fully shows the sincerity and determination of China to actively address climate change and participate in related international cooperations," he stressed.

He added that to conserving resources and protecting the environment are China's basic national policies. The Chinese government has established the National Leading Group on Climate Change headed by Premier Wen Jiabao in order to strengthen leadership and to effectively address climate change

"On the recently-concluded 17th National Congress of the Chinese Communist Party, Party Secretary-General Hu Jintao pointed out that China will further pursue its Scientific Think of Development and stick to a human-orientated, comprehensively harmonious and sustainable development path," Xie noted.

Xie said that China will endeavor to construct an eco-civilization, and will remarkably increase the proportion of renewable energy, effectively control the emissions of major pollutants, improve the quality of eco-environment.

China will also enhance its capacity building on addressing climate change and make new contributions to the protection of global climate. All of these efforts indicated that the Chinese government will be trying its best to make positive efforts to address climate change in a responsible manner, he said.

Xie assured that the Chinese delegation will, "as always, actively, practically and constructively participate in the discussions and consultations of this Conference in the spirit of cooperation, and make its part of contribution to the success of this (Bali) Conference."

The climate change conference gathered over 10,000 delegates from more than 180 countries from intergovernmental and non-governmental organizations.

The Conference is tasked with drawing up a roadmap for negotiations on a new climate deal before the current phase of the Kyoto Protocol expires in 2012.

### **Firms may have to reveal green details**

December 24 (China Daily) -- The State Environmental Protection Administration (SEPA) is attempting to force Chinese companies, both listed and those waiting to be, to regularly reveal environmental information to the public.

Disclosure rules for listed companies could be finalized in the next six months, Ge Chazhong, an official affiliated with SEPA, told China Daily.

Environmental disclosure and inspection requirements have already been tightened for companies applying for their initial public offer (IPO) of shares.

Companies going public are required by China's existing securities regulations to guarantee disclosure of truthful environmental details together with financial records in IPOs 36 months prior to floating.

Deliberate or premeditated cover-ups risk administrative penalty and criminal conviction, according to regulations enacted in May 2006.

Ge said SEPA officials are now working on specific terms for compulsory corporate

environmental disclosure for enterprises already listed.

He said he hopes for cooperation with the China Securities Regulatory Commission (CSRC) to develop a new set of regulations by mid-2008.

At a recent forum on environmental protection and financial service in Beijing, Ge criticized Chinese public companies for generally poor environmental disclosures containing only "qualitative descriptions" and "scant information".

Some 2006 annual reports included "just a few characters" or "a dozen or so characters" on their environmental responsibilities, he lamented.

But in future, SEPA and CSRC will seek to force public companies to provide detailed information in annual reports.

Proper environmental disclosure by publicly listed companies is a key issue because they feature among the country's largest enterprises and have an important bearing on the overall economy, Ge pointed out.

Companies may soon be forced to report key emission indexes, such as SO<sub>2</sub> and CO<sub>2</sub>, and records and goals in energy efficiency and emission cuts, along with investment-related data.

If companies fail to comply with the Environmental Protection Law and government regulations, fail also to disclose their environmental performance or release false information, they will be subject to penalty by law and be blacklisted on government websites.

"Once the first draft comes out, we will start consulting with the CSRC and corporate representatives to revise for the final version," Ge told China Daily.

He also mentioned a study that found just half of 200 Chinese public companies included environmental details in their 2006 annual reports, with none specifying emissions data and pollution control investment.

Future mandatory environmental disclosure will, according to Ge, facilitate environmental law reinforcement and prompt people to duly weigh environmental factors in investment decisions.

## Humans can ward off climate threat

December 7 (China Daily) -- The environmental problems of the world today seem to be getting out of hand: Climate change, acid rain, destruction of the ozone layer, sharp decrease of tropical forests, and desertification. The United Nations Intergovernmental Panel on Climate Change (IPCC) has basically concluded that global warming is largely caused by human activities in its fourth assessment report.

That said, the environmental issue deserves to be examined from a dialectical point of view: the fact the human race is capable of overcoming global environmental crises is just as obvious as its seriousness and urgency. For this reason I would like to borrow the examples of the "lily pad problem" that once troubled France and the "horse manure public hazard" that some British scholars warned people of during the Industrial Revolution. They just might help people better understand the nature of today's environmental problems.

Lily pads float on the surface of water and double the area they cover everyday. When lily pads cover up the whole surface of a pond, all fish and other organisms living underneath will suffocate to death. Suppose lily pads cover up the whole surface of a pond on the 30th day of their growth (when they bring all life forms in that pond to a horrible end), how long does it take them to shield half of the surface? The correct answer is 29 days, or the day before they completely blanket the pond.

The difficult part of this "lily pad problem" is that people tend to assume that, if lily pads need 29 days to spread over half of the pond, it would probably take them a few more days to blanket the other half, while the terrible end will in fact come the day after.

The deterioration of our planet develops in a similar fashion. It is not likely to alarm people when it slowly worsens over a long period of time, but it would be too late for them to do anything when that "extremely tragic end" is on their door step.

The "lily pad theory" qualifies as an appropriate and severe warning: Absolutely do not underestimate the severity of any environmental problem, because it develops at an accelerated pace and simply gives people no time to come

to their senses and react when it has "accelerated" past the point of no return.

The IPCC points out in its fourth report that, if humankind fails to take effective measures in time, the temperatures at the end of this century will be 6.4 C higher than they are now; if the discharge of greenhouse gas in 2050 is not reduced to half of the 2000 level, temperatures could rise 2 C higher; climate change will very likely cause large-scale economic recession and irreversible ecological catastrophe. It warns that we might find in 30 years that human civilization is on the brink of retrogression.

This is absolutely not scare-mongering, but a scientific conclusion proven many times over. In fact, human civilization is but "a fragile flower" born in the development of nature, which has been going on for hundreds of millions of years. As early as 1988, Fortune magazine ran an article that asks the question: "The world is warming and what does it mean?" and points out "civilization has been developing in a narrow climate belt on the planet". The temperature on Earth is like one's body temperature. If figuring out what difference two more degrees in temperature will make in a few decades time is too hard for you, try imagining how it would feel if your own body temperature rises from 37-38 C to 39-40 C.

While realizing the severity and urgency of environmental problems, it is also necessary to know that human civilization is very resilient and, through the development of science and technology and the progress of civilization, humankind can surely overcome environmental crises and achieve sustainable development. It would be a colossal mistake to lose hope of human civilization or even buy into the "doomsday" gibberish some people pedaled a while ago just because the environmental problems are mounting.

Toward the end of the 19th century, when the Industrial Revolution was taking its infant steps, the transportation of goods was growing rapidly in volume, but horse-drawn carts remained the dominant means of transportation at that time, hence the galloping problem of horse manure as a "public hazard" was becoming a serious social issue of the day. Some British scholars sounded the alarm, saying if the transportation volume continued to grow at the mean pace, the increased number of horses to meet the rising

demand would bury the whole of England under a 10-foot thick blanket of horse manure in 50 years.

However, with the development, use and popularization of locomotives and ships powered by steam engines, humankind shattered the transportation problem by means of modern technology. Later, the traditional means of transportation such as horse-drawn carriages were gradually replaced by trains and automobiles driven by steam engines, internal combustion engines and electric motors, and the tragedy of "the whole of England being buried under a blanket of horse manure" did not happen.

The "lily pad theory" reminds people of the frighteningly accelerated pace at which environmental problems could develop, while the "horse manure theory" tells people that no matter how enormous and difficult the environmental problems are, humankind can surely control and overcome them.

Resolving environmental problems requires science and technology, but this is not just another matter of science and technology. Mahatma Gandhi, the Father of India, once said: "Earth provides enough to satisfy every man's need, but not every man's greed."

The excessive consumption of natural resources as represented by the Western life style, has triggered fierce criticism. Some point out they have been consuming resources like there is no tomorrow. Apparently, the sick condition of the environment on Earth is exactly a reflection of the sick condition of Western civilization and consumer culture.

As a nation going all out to build up a basically well-off society, China should be the first to build a healthy, thrifty and civilized production style as well as a life style that suits our national condition and the "world" (the real condition of the world) better than ever.

Written by Feng Zhaokui, The author is a researcher with the Chinese Academy of Social Sciences.

## Green issues reshaping business strategies

December 26 (China Daily) -- Environmental issues like greenhouse gas emissions, energy consumption and water and air pollution have become a major concern in China.

Heightened environmental concerns are reshaping the nation's approach to economic and social development, pressuring Chinese companies to manage environmental impact as effectively as other business operations.

Since China joined the WTO and won the right to host the 2008 Olympic Games, government and business leaders have been pursuing environmental investment and raising awareness. They realize that in today's world of global interconnectivity, companies that remain in an environmentally unfriendly mode of operation are not going to reach full potential.

In our report, "Green China: Leveraging innovative technologies and solutions to uphold companies' environmental responsibilities", we argue that companies can maximize the opportunities associated with incorporating environmental considerations into their business strategies.

Technology is a critical factor contributing to successful planning and implementation of environmental initiatives. While modern pollution detection and control equipment are critical in optimizing resource use and reducing pollution discharge from the core production process, advanced computing technologies can substantially reduce power consumption in data centers and by IT equipment in a typical office environment.

Furthermore, environmental technologies are not limited to operations within one company, but rather can allow for data collection, analysis and environmental performance management in extended organization networks like suppliers and business partners.

Heavy polluters can implement a comprehensive environmental management system to drive environmental protection initiatives.

The system provides a mechanism to facilitate continual improvement in environmental performance, bringing about enormous benefits and, more importantly, preventing environmental hazards that could result in substantial damage to company reputation and financial loss.

Successful implementation of such a management system requires a high degree of commitment, proactive communications and training, and alignment of the existing processes and structure with environmental improvement and risk management initiatives.

Also, a sound technical infrastructure, including effective pollution prevention and abatement and monitoring facilities, and an effective management information system to collect, integrate and analyze information and generate reports, are critical to effective environmental impact management.

Incorporating operational energy efficiency into a company's overall business strategy will facilitate progression toward a reduction in the environmental impact and cost of business operations.

One specific area of current focus is energy efficiency. From an IT standpoint, data center power consumption continues to receive significant attention. Maximizing computer power use through technological breakthroughs such as server consolidation and virtualization is one approach to optimizing energy efficiency.

Our report found that if Chinese companies could achieve a 10 percent energy reduction on all IT facilities, the savings could supply the entire 2008 Beijing Olympic Games, as well as reduce China's carbon footprint by 2.5 million tons.

Chinese companies that incorporate environmental considerations into business strategy and operations will be at the forefront of changing markets and contribute to strengthening the long-term sustainability of the Chinese economy.

A company's environmental impact and management initiatives are now a major factor for consumers, corporate partners and investors - so the potential benefits are enormous.

## **Air-sea interaction lab opened to analyze climate change**

December 28 (Xinhua) - BEIJING - China opened its first air-sea interaction and climate change laboratory in Qingdao, Shandong Province, to closely observe climate change on the sea and to provide scientific solutions.

The newly-built lab in the eastern coastal province, funded and run by the State Oceanic Administration (SOA) First Institute of Oceanography (FIO), would conduct research on climate influencing phenomena of mass, energy, momentum and radiation fluxes across the sea, FIO head Ma Deyi said in the China Ocean News on Thursday.

The lab's research topics mainly included the study of concentration of size distribution of marine aerosol in the boundary layer over the sea surface and in the coastal zone. It would also study atmospheric optical depth over coastal zones and open sea, and modeling of the light field in the atmosphere and ocean, Ma said.

The lab would also act as a nerve center for an underway oceanic monitoring network. This was expected to be completed next year for observing climate change in the Bohai Sea, the South China Sea and sea areas, said vice SOA chief Wang Fei.

"We'll strengthen our capability in forecasting weather and analyzing air-sea interactions in deep seas," he said.

The UN Intergovernmental Panel on Climate Change (IPCC) issued a new report on the phenomenon earlier this year. It warned the world's average temperature, if left unchecked, could rise by as much as two to four degrees centigrade by 2080. This would probably trigger more natural disasters endangering human beings.

Representatives from 180 countries convened earlier this month in Bali, Indonesia, agreeing on a clear agenda for the key climate change issues to be negotiated up to 2009. These included actions for adapting to the negative consequences of climate change, methods to reduce greenhouse gas emissions, methods to deploy climate-friendly technologies and financing both adaptation and mitigation measures.

Sea-weather observation and air-sea interactions analysis were effective in monitoring global climate change.

World-leading organizations, such as the National Aeronautics and Space Administration, and top universities, including Massachusetts Institute of Technology and California Institute of Technology, have already focused on air-sea interaction to know more about climate change.

## **Fund urged for green expertise transfer**

December 11 (China Daily) -- BALI-- China yesterday called on rich nations to establish a public fund within the Kyoto Protocol to facilitate transfer of green technology to developing countries.

Part of the revenues for the fund could be generated by developed countries levying taxes on carbon emissions, environmental pollution or energy and resource consumption, said Zou Ji, one of 40-odd Chinese delegates attending the world climate conference which is in its crucial final week.

At yesterday's meeting, the UN climate chief, Yvo de Boer, said cutting emissions by up to 40 percent was crucial for reining in rising temperatures and drawing investors who can provide the high-tech solutions needed to ward off catastrophe.

Zou, also a professor at Renmin University of China, said technologies to reduce greenhouse gas (GHG) emissions will be more popular in developing countries if the pricing is reasonable.

He said the fund he proposed will provide incentives to technology holders, mostly big private companies, to transfer technologies to countries such as China, which is thirsty for green expertise.

Under the United Nations Framework Convention on Climate Change, industrialized countries are obliged to take practical steps to promote, facilitate and finance the transfer of, or access to, environmentally sound technologies and know-how to developing countries.

"However, China has had to pay very high prices for such technologies to raise energy efficiency and facilitate sustainable development," Zou said.

Citing the example of Integrated Gasification Combined Cycle (IGCC) technology used in

power generation, he said it has the potential to reduce carbon emissions by 25-50 percent, or even more, which will help China - which depends mostly on coal for power generation - to cut emissions sharply.

But there is no commercial plant using IGCC technology in the country because the cost of power generation is about two times that of conventional production.

China urgently needs advanced green technologies not only in power generation but also in transportation, construction, metallurgy and chemical industries, he said.

The World Wide Fund for Nature (WWF), an international non-governmental organization, said yesterday: "They (developed countries) need to recognize the need of developing countries for technology transfer and financing of new, cleaner technologies - and they need to put up the cash to support their good intentions."