The China Sustainable Energy Program
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CHINA PROGRAM UPDATE & CLIPPINGS

Issue 19 **February 2006**

Message from the Director:

Happy Year of the Dog! 2006 began with a bang, both from the fireworks revival in China's main cities as well as an explosion of government activity to bolster energy efficiency and renewable energy.

The big news stems from the Party Plenum last November, now ensconced in the 11th Five-Year Plan (2006-2010). China has targeted overall energy intensity (energy consumption per dollar economic output) to improve *20 percent* by 2010 If well implemented, this would be the world's largest and most rapid global warming pollution reduction initiative. Our Senior Policy Advisory Council ("PAC"), comprised of sixteen ministers representing the main energy-related ministries, beseeched our program to support national and provincial action plans for implementing the target. Lawrence Berkeley National Lab and the National Development and Reform Commission's (NDRC) Energy Research Institute will lead this work, and aim to roll out the plans in November 2006 at our next PAC meeting, to include a governor's conference on implementing the 2010 target.

Former US President Bush Sr. and Governor Schwarzenegger stressed the importance of US-China cooperation

Former President Bush, and Governor Schwarzenegger provided keynote addresses at our November 2005 PAC meeting at the Great Hall of the People. Both called for bilateral policy cooperation to spur investment in sustainable energy technologies. China's Ministers of Finance (MOF), NDRC, and the State Council Development Research Center also provided keynotes. Ahead of the event, MOF issued energy pricing regulations that are slightly more cost-reflective.

Workshop and news listed by program area follow below, including highlights of all policy projects we supported in 2005.

We appreciate your continued interest in China's sustainable energy future. Best regards for 2006!

Doug Ogden

Contents

Program Update 2
Workshop Update 4
News Update 6
We Don't Need More Power 6
New pricing system for green electricity 7
Selling California to Asia, seeking re-election at home 9
Energy prices to be deregulated 11
Five steps to prevent future energy woes 11
Nations step up energy co-op 13
China Sets Renewable Energy Quota For Power Companies 15
Buyers of small cars to enjoy big tax breaks 16

Program Updates—February 2006

Renewable Energy

2005 Highlights

- In February 2005, the National People's Congress adopted China's first *Renewable Energy Law*, that calls for 15 percent of all energy (not just electricity) to come from renewables by 2020. The Law requires at least 120 GW of electricity to come from renewables in that year. This is an ambitious goal: 120 GW is 50 percent more than the total volume requirement that the U.S. considered including in, but then stripped out of, last year's U.S. Energy Policy Act. Grantees, including the Center for Resource Solutions (CRS) is helping NDRC develop regulations—including favorable feed-in tariffs and incremental cost-sharing mechanisms as well as a national public benefits fund to support renewable energy development. Recent developments on the feed-in rules and quota requirements in a news article below.
- Grantee-designed wind concession projects continue to increase China's wind energy generation capacity. Over 1,000 MW of new wind energy projects, representing a total investment of U.S. $1 billion, are now under construction. Once completed, these projects could reduce carbon emissions by 600,000 metric tons every year.

- In June 2005, Shanghai launched China's first "green pricing" program. Fifteen enterprises are supporting the installation of a 20-MW wind farm in the city by committing to purchase its entire output at a price higher than that of fossil fuel-generated electricity. Shanghai aims to expand the program and add more wind farms. CRS is also leading this work.
- On December 31, 2005, just prior to entry into force of the Renewable Energy Law on January 1, NDRC abruptly stripped out the feed-in tariff elements of the Law. Quota requirements on larger utilities, described below, survived. CSEP and main grantees, including Global Village Beijing, held a media event on January 20 with policy experts, wind developers, and renewable energy technology manufacturers to mark the implementation of the Law, highlight challenges, and urge NDRC to reverse its feed-in tariff decision.

Installation of China's first domestically manufactured MW-scale wind turbines at Dabancheng Wind Farm

Electric Utilities

2005 Highlights

- NDRC issued an emergency decree to halt the construction of unauthorized power plants, instructing government agencies, banks, and grid companies to deny land permits, loans, and grid connection to these rogue power plants. The generation capacity of the unauthorized power plants is estimated to total over 120 gigawatts (GW) (2.5 times the total generation capacity of California). China publicized a list of power projects failing to meet environmental requirements, increasing public pressure on the project owners.
- In April 2005, NDRC issued grantee-recommended pricing policies for electricity interconnection, transmission, distribution, and retail rates. The regulations eliminate a number of cross subsidies and set prices that include more of the costs of electricity generation. Particularly important are new feed-in tariffs for renewable energy and time-of-use (TOU), interruptible load, and critical peak tariffs that encourage demand-side management (DSM) and end-use efficiency.
- In summer 2005, central, provincial, and local governments and utilities used DSM to cope with power shortages. DSM pilots in Jiangsu Province and Shanghai used DSM to cut peak load by 6,000 megawatts (MW) and 3,000 MW, respectively. A significant component of these savings came from upgrading the energy efficiency of appliances and manufacturing equipment. In Jiangsu, energy-efficiency projects cut annual electricity load by over 930 million kWh, cut carbon emissions by 250,000 metric tons, and saved over US $70 million.
- Jiangsu and Shanghai are "constructing" End-Use Efficiency Power Plants (EPPs). An EPP is a bundled set of energy efficiency programs (including investments in modern lighting, refrigeration, air conditioning, electric motors, and the like) designed to deliver the energy capacity equivalent of a large conventional power plant at only a quarter of the cost. ADB approved a US $300 million loan for the projects; Jiangsu is going ahead with its own financing (about US$12 million) and is installing advanced electric motors in industrial facilities. The Natural Resources Defense Council (NRDC) and the Regulatory Assistance Project (RAP) are spearheading this work with the State Grid Corp. DSM Instruction

Center in Nanjing, and the Shanghai Energy Conservation Center (SECC).

Buildings

2005 Highlights

- The Standardization Administration of China (SAC) approved a "reach" energy-efficiency standard for television sets. This is the world's first standard to regulate both standby power and active model power usage of television sets, and could cut China's carbon emissions by 1 million tons annually by 2010. Standards for gas water heaters and power supplies are on track for approval. Appliance standards are rapidly becoming institutionalized; Lawrence Berkeley National Lab (LBNL) and the China National Institute of Standardization (CNIS) lead this work. The greatest challenge is ensuring local compliance.
- Energy-efficiency information labels, which guide consumers to buy the most efficient appliances, are now mandatory: in March 2005, China began requiring manufacturers to affix the labels to air conditioners and refrigerators before sale.
- The Ministry of Construction (MOC) issued China's first national commercial building code, effective on July 1. By 2020 the code could reduce carbon emissions by 50 million metric tons every year. The State Council issued implementation requirements that carry strong legal weight, requiring provincial and municipal governments to implement building codes. LBNL leads this work with the China Building Energy Efficiency Association and the China Academy of Building Research
- Building code implementation pilots in six cities are progressing better than expected. When in the spotlight of Beijing, local officials "rise to the occasion"; the cities of Shanghai, Fuzhou, Xiamen, Guangzhou, Shenzhen, and Chongqing are demonstrating the administrative procedures—including inspections and enforcement during all phases of construction—necessary to ensure compliance with advanced energy codes.

Chongqing's old buildings are being demolished at an incredible rate.

Industry

2005 Highlights

- In March 2005, Premier Wen Jiabao instructed the National People's Congress (NPC) to expedite energy-efficiency in large industrial enterprises. He directly called for implementation of energy-efficiency agreements like those piloted by CSEP grantees in Shandong Province. The NPC since delegated powers to NDRC to implement the *Top-1000 Enterprises Energy-Efficiency Program*. Grantees, including LBNL, Beijing University, and industry associations—with input from the U.K.'s Department for Environment, Food, and Rural Affairs (DEFRA)—are now working with NDRC to design the program, which will require China's 1,000 most energy-consumptive enterprises—which consume a third of China's primary energy—to benchmark their energy performance, install efficient equipment, and attain energy efficiency improvement targets (including the 20 percent 2010 efficiency target called for in the Eleventh Five-Year Plan). If effectively implemented, the program could reduce carbon emissions by 54 million metric tons a year.
- The Standardization Administration of China is set to approve a grantee-recommended "reach" electric motor energy-efficiency standard. The standard, which would go into effect in 2010, is projected to save 21.4 million metric tons of carbon in 2020. The American Council for an Energy–Efficient Economy (ACEEE) and CNIS are leading this work.

Transportation

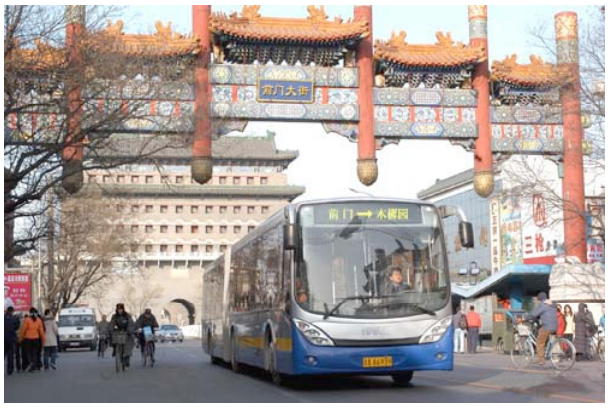
2005 Highlights

- Phase one of China's first fuel economy standard for light-duty vehicles went into effect on July 1, 2005. The standard, over 20 percent more stringent than U.S. CAFE standards, is being implemented using a "full mandatory" procedure—i.e., if a vehicle does not meet the standard, it can not be registered or sold. Phase two, more stringent still, goes into effect on January 1, 2008. In that year, fully 90 percent of the sport utility vehicles now plying America's roads will no longer be legal for sale in China. The China Automotive Technology and Research Center (CATARC) worked with Feng An to develop the standards.
- The Ministry of Finance (MOF) adopted vehicle excise taxes that rise with increased vehicle engine sizes. Each

of the seven engine size categories has a different excise tax level, ranging from 1 to 20 percent. Larger engines, including the standard 4 liter size found in U.S. SUVs, are taxed at 20 percent, creating an $8,000 (approx.) tax at the point of purchase. The excise taxes are aimed at shifting China's vehicle market toward smaller, fuel-efficient and less-polluting vehicles.

The Chinese-built Prius will be priced between US$35,680- $37,410. The high price is largely due to tariffs on imported parts, slated to decline under WTO.

- China adopted Euro-III and Euro-IV emissions standards for both gasoline and diesel engines, to go into effect nationwide in 2007 and 2010, respectively. Euro-III went into effect nationwide on December 30 for light- and heavy-duty gasoline vehicles as well as heavy-duty diesel engines. Beijing will go faster; beginning January 1, 2007, Beijing will apply Euro IV emission standards to light-duty diesel vehicles, implement clean diesel fuel, and may restrict diesel vehicle sales. Beijing intends to implement Euro-IV in time for the 2008 Olympics. Michael Walsh works with SEPA and the Beijing EPB to develop these standards.
- Beginning December 31, new light-duty vehicles in Beijing must install on-board diagnostic (OBD) systems. Models that were approved under Euro III emission standards before December 31, 2005 can postpone the installation of OBD, but models without an OBD system will be prohibited after one year.
- CATARC helped NDRC to develop hybrid vehicle standards and certification procedures, both of which are needed to sell and register hybrids. The Standardization Administration of China (SAC) published six hybrid vehicle standards in May, all of which went into effect on October 1. As a result, once hybrid vehicles comply with the standards and are registered on NDRC product lists they can be sold in China. Michael Walsh and Michael Wang helped SAC with the standards. The first hybrid car model—Toyota's Prius—was certificated and began production by China's First Auto Works in Changchun.
- With support from the William and Flora Hewlett Foundation, CSEP formally launched the **China Sustainable Transportation Center (CSTC)** at a national workshop in Beijing in September 2005. The CSTC staff, and consultants Kangming Xu and Logit, are now delivering bus rapid transit (BRT) technical support in Beijing, Jinan, Xi'an, Hangzhou, Chengdu, and Kunming.
- On December 30, Beijing opened China's first full-length BRT corridor, which extends from Tiananmen Square 16 kilometers into the southeast suburbs. The system has had unexpectedly high passenger volume, over 80,000 per day. Beijing is now designing its second and third BRT corridors and will begin construction this year.
- Hangzhou started building its first BRT corridor. It plans an 11-corridor network totaling 165 kilometers over the next 15 years.
- Kunming is optimizing routes, operational management, and creating a new ticketing system to upgrade its current system to a full BRT system. Jinan, the capital of Shandong Province, began construction of its first BRT corridor.



Workshop Update

International Forum on Tax and Fiscal Policies

On November 16-17, CSEP held the "International Forum on Tax and Fiscal Policies to Promote Sustainable Energy Development" at Beijing's Great Hall of the People. The forum focused on market-based measures—reform of energy tariffs, tax and fiscal policies, and environmental levies—to promote energy efficiency and clean energy development.

Former President of the United States George H.W. Bush, Governor of California Arnold Schwarzenegger, Sweden's Minister for Sustainable Development Mona Sahlin, and Nobel Laureate and LBNL Director Dr. Steven Chu provided keynote addresses. Other attendees included officials from China's top ministries, experts from domestic and foreign research institutes, representatives from multilteral organizations and NGOs, and CSEP's Senior Policy Advisory Council and Dialogue Partner members. Noteworthy outcomes inlcuded (1) elevating the importance of energy pricing policy, (2) highlighting the need to enhance national budgets for policy implementation, and (3) engaging the Ministry of Finance (MOF).

Eighth CSEP Senior Policy Advisory Council (PAC) Meeting

Our Eighth PAC meeting was held at Beijing's Great Hall of the People November 18th. The meeting highlighted grantee achievements in 2005 and recommendations for our 2006 agenda. International PAC members, including William K. Reilly and Susan Tierney, presented on the National Commission on Energy Policy and the U.S. Energy Policy Act, respectively. Chinese grantees reported program progress, including China's (1) adoption of the Renewable Energy Law, (2) implementation of the light-duty fuel economy standards, (3) establishment of vehicle engine-size excise taxes that penalize larger, less efficient engines, (4) construction of BRT corridors in Beijing and Jinan, and (5) setting of new tariffs for electricity and fuels that better reflect costs.

Both NDRC and the State Council Development Research Center urged CSEP to help China reach the 2010 20-percent energy intensity improvement target. Achieving this ambitious target will require concerted engagement with all senior ministries and the development of action plans for provincial and local areas.

Energy Efficiency Standards Implementation and Enforcement Workshop

Organized by the State General Administration of Quality Supervision, Inspection and Quarantine and the Standardization Administration of China (SAC), the "International Workshop on Energy Efficiency Standards Implementation and Enforcement" was held on November 7th in Beijing. Attendees included experts from the US, EU, Australia, UK, Denmark, and Japan, as well as government representatives, research institutes, industry associations, testing authorities, foreign diplomatic missions, manufacturers, and the media.

The workshop emphasized international "best practice" in the application of energy-efficiency standards and labels, including enforcement mechanisms. Recommendations included (1) establishing an elimination system for high-energy-consuming products, (2) improving the transparency of supervision mechanisms, and (3) improving international cooperation.

Residential Construction Standards Workshop

The Ministry of Construction teamed with CSEP to hold its second workshop on developing national engineering and construction standards for residential buildings, in Shenzhen. The workshop assembled members of the standards drafting team to review technical issues, including delineating building energy consumption calculation zones and residential heating and air-conditioner energy consumption.

National Power Supply Energy Efficiency Standard

On December 2nd, the China National Energy Standards Committee reviewed China's new power supply efficiency standard. A team of experts led by Director General and Vice Director of the Committee, Bai Rongchun, recommended revisions that will be resubmitted to the Committee for final approval and promulgation as a mandatory national standard.

The standard will support (1) a power supply energy-efficiency labeling program, (2) a high-energy-consumption products elimination system, and (3) a power supply government procurement program. China worked with the US, Australia, and the EU to develop the standard, which resulted in all four countries establishing harmonized testing methods for measuring power supply energy consumption. The standard eliminates technical barriers and promotes the international trade of efficient power supplies.

Workshop on Renewable Energy Tariff and Cost Amortization

China's Renewable Energy Law went into effect on January 1, 2006. However, renewable energy tariffs and cost amortization methods still need to be established. With CSEP support, NDRC convened a workshop on October 18th with NDRC's Pricing Department to discuss draft rules. Meeting participants, including representatives from all major power producers, power

grids, renewable energy equipment vendors, research institutes, and international experts recommended these revisions: (1) the subsidized tariff should take into account regional differences, and (2) biomass power producers should be given the power of independent price setting. Officials from NDRC's Pricing Department agreed to consider the recommendations.

International Renewable Energy Conference

Government officials, including Vice Premier Zeng Peiyan, researchers, corporate representatives and development advocates from 78 countries and regions attended this year's Annual International Renewable Energy Conference, at Beijing's Great Hall of the People on November 7-8th. The agenda emphasized investment and financing, entrepreneurship, technology, and South-to-South Cooperation. Participating countries passed the "Beijing Declaration," in which all countries committed to accelerating renewable energy development and developed countries committed to helping their developing counterparts through technology transfer and capacity building.

International Forum on Bus Rapid Transit (BRT)

The China Sustainable Transportation Center (CSTC), CSEP, and the Hewlett Foundation held an International Forum on Implementing BRT on October 19. The Forum brought together transportation planners and government officials from 20 Chinese cities to discuss the technical merits of implementing BRT. The forum helped showcase CSTC as a technical service center dedicated to helping Chinese cities develop all aspects of BRT systems.

Sustainable Energy Journalists Forum: BRT Systems

With CSEP support, Global Village of Beijing held the "Sustainable Energy Journalists Forum: BRT Systems" in Beijing on December 22nd. The goal of the forum was to increase Chinese journalists' understanding of sustainable transportation. International transportation expert Xu Kangming, Global Village of Beijing Director Liao Xiaoyi, and CSEP Transportation Program Officer He Dongquan elaborated on the development of BRT systems in China and abroad. Journalists followed up the event with a special interview on December 30th covering the opening of Beijing's first BRT corridor.

News Update

Newsweek INTERNATIONAL EDITION

We Don't Need More Power

For each dollar of economic output, China wastes 11 times more energy than Japan

By Douglas Ogden
Newsweek International

Feb. 6, 2006 issue - The old adage "to a hammer, every problem looks like a nail" sums up how most countries deal with energy shortages. Planners race to build electricity plants—driven by coal, natural gas, hydro- or nuclear power—whenever shortages appear. This knee-jerk supply bias has been the cause of serious economic, public health and pollution problems. It sounds counterintuitive, but the best way to meet the rising demand for energy is not to supply more. It's to modernize the appliances and equipment that use energy. The cheapest, fastest and cleanest energy resource by far is energy efficiency. China is only the most striking example of a country that ignores this.

The growth of China's appetite for energy in the last four years has been staggering. As the world's fastest-growing and most coal-dependent economy, China's share of world coal consumption in 2005 was 40 percent—2 billion tons—more coal than the United States, India and Russia combined. With its blistering pace of economic growth—over 9 percent annually for the last 25 years—China can't mine coal fast enough, triggering electricity shortages. The response of local officials has been to build the equivalent of one huge 1,000-megawatt coal-fired power plant every week—which adds the equivalent of Spain's entire electricity capacity each year. These are typically inefficient, 1950s-era plants that waste two-thirds of their coal. For every dollar of economic output, China wastes three times more energy than the global average, and 11 times more than Japan. China's energy waste has only been exacerbated by adding all these coal plants—160,000 megawatts were added over the last three years, and another 250,000 megawatts are likely in the next two years.

This building spree is largely unnecessary. It would have

been cheaper, cleaner and more productive for China to have invested instead in energy efficiency. Making factories efficient and other demand-side investments saves more energy while costing only a quarter to one third as much as building new power plants—with zero pollution. The building spree has largely derailed China's energy diversification into alternative energy sources. Most of the new coal plants aren't running at full capacity due to underdeveloped transmission networks, antiquated market rules and protectionism that conspire against dispatching power over wide areas.

Until recently, China was the developing world's leader in energy efficiency. From 1980 to 2000, the country quadrupled its economy while growing energy at only half the rate of economic growth. In 2001, China announced a similar goal, to quadruple GDP by 2020 and similarly targeted energy to grow at only half the rate of economic growth. But since 2001, China has flipped this trend: energy growth is now over one-and-a-half times the rate of economic growth. Investment in energy efficiency has fallen off to only one third of its 1983 peak-year levels.

There are signs that China's leaders are beginning to grasp the urgency of slowing energy growth, diversifying away from coal and investing in energy efficiency. The 11th Five-Year Plan (2006-2010) calls for improving national energy efficiency 20 percent. This ambitious target would be the world's largest, and fastest, global warming pollution-reduction initiative. China is already beginning to implement this plan: last year, it adopted vehicle fuel economy standards that are 20 percent more stringent than those in the United States, which could cut 60 million tons of global warming pollution and save over a half-billion barrels of oil by 2030. The 2005 Renewable Energy Law mandates that 15 percent of China's energy come from renewables by 2020—about 120,000 megawatts of new renewable energy, including a $40 billion wind-energy market. The development of more efficient consumer appliances such as refrigerators, lighting and TVs could save 10 percent of all residential electricity in 2010, obviating the need for 36 large coal-fired power plants. The 1,000 largest energy-consuming enterprises, which consume a third of all primary energy in China, are poised to implement the world's most advanced procedures for modernizing their energy performance. Twenty cities are developing bus rapid-transit systems that move people as efficiently as subways at only 10 percent of the cost.

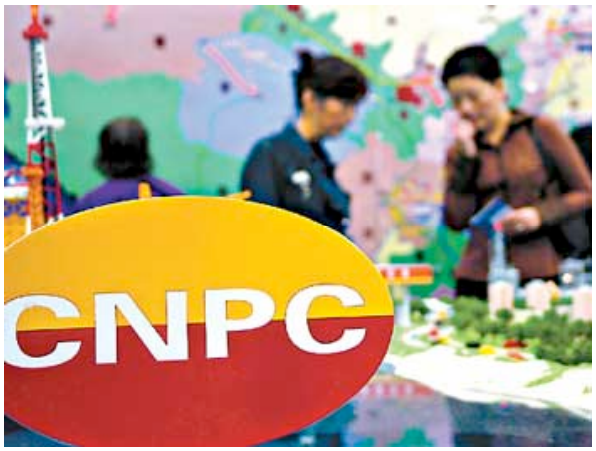
China still has a long way to go in restoring the balance between energy demand and economic growth. It needs to invest about $37 billion a year in modernizing electricity-consuming equipment—a twelvefold increase from today's levels. Similar efficiency improvements in the United States, Europe and Japan could significantly cut energy demand while reducing greenhouse gases. Building power plants isn't the only tool we have.

OGDEN is director of the China Sustainable Energy Program in Beijing and San Francisco (www.efchina.org).

THE NATIONAL ENGLISH LANGUAGE NEWSPAPER
CHINA DAILY

New pricing system for green electricity

By Wang Ying
November 17, 2005



China currently produces only 7 percent of its electricity from renewable sources. It hopes this figure will rise to 15 percent by 2020.

Senior officials from the government's top pricing and tax decision-making group yesterday said China has come up with a pricing system for electricity generated by renewable energy. The government will also raise the price of electricity for domestic customers from the start of next year by a small margin.

The new electricity pricing mechanism will accompany the country's first law on renewable energy, which will

come in at the beginning of next year. It will set the price at which generators of electricity can sell their power to grid companies.

This will be different from region to region due to differences in economic development, and will be within a range of 0.49 yuan to 0.69 yuan (0.06 US cents to 0.085 US cents) per kilowatt-hour (kwh), said Wang Zhongying, director of the centre for renewable energy development under the National Development and Reform Commission (NDRC). The NDRC unit is responsible for making regulations for the renewable energy law.

Wang was speaking at the International Forum on Tax and Fiscal Policies to Promote Sustainable Development, hosted by the Energy Foundation yesterday in Beijing. Keynote speakers at the forum also included Vice-Minister of Finance Lou Jiwei and Vice-Minster of the NDRC Zhang Guobao, who said the government is considering levying a windfall tax on the country's top two oil companies, Sinopec and PetroChina. This could happen if crude prices remain high.

Zhang also said further tax incentives should be given to hydro and wind power producers. Wang said the price-setting body at the NDRC is now collecting feedback about the proposal. He said the additional money that it costs to produce renewable-energy electricity will be paid for by customers.

"There will be a slight (electricity) tariff increase next year, which will be less than 0.01 yuan (0.0012 US cents)," Wang Fengchun, deputy director-general of the research department under the environmental protection & resources conservation committee of the National People's Congress, yesterday told China Daily.

However, poorer people, residents in the Tibet Autonomous Region, cities and counties powered by their separate electricity supply network (off the national grid), as well as the agricultural sector, will not pay the additional charges, Wang Zhongying said.

According to the pricing proposal, the Minister of Finance will establish a special account and return the extra money to the country's grid companies, including the State Grid Corp of China and China Southern Power Grid, Wang Zhongying said. This will offset the higher cost of buying green electricity.

Wang Fengchun said there has been some complaints from the electricity sector that the new tariff for renewable energies is still too low, but Wang Zhongying yesterday said no big setbacks exist to prevent the new pricing system from taking effect next year.

Remarks from senior officials yesterday also showed a government determination to increase taxes on State-owned resources, such as oil and coal, to better reflect their value. "The country's big energy companies, such as Sinopec and PetroChina, are making windfall profits from oil resources while world crude prices remain strong," Lou told yesterday's forum.

The Ministry of Finance will levy a special tax on both oil companies if crude prices stay above US$40 per barrel, since the operating costs of oil exploitation is only US$12 per barrel on average, Lou said. He yesterday refused to comment when asked about the timetable and amount of the oil tax, but said Sinopec and PetroChina have reached an agreement with the ministry about the new tax.

The ministry is also considering charging the country's State-owned coal miners for mining rights, but the proposal has met strong objection from the China Coal Industry Association, which represents the interests of State-owned coal companies, Lou said.

The NDRC's Zhang yesterday said value-added tax for wind power generators is still too high.

China has vowed to use renewable energy to supply 15 per cent of the nation's electricity needs by 2020, compared with the current level of 7 per cent.

San Francisco Chronicle
NORTHERN CALIFORNIA'S LARGEST NEWSPAPER

Selling California to Asia, seeking re-election at home

CREATING MARKETS: One goal is to tout pollution solutions of Golden State firms

By Robert Collier
November 14, 2005


Reuters / Emma Graham-Harrison

A Chinese worker assembles solar panels at SunOasis, a solar energy manufacturer, in Urumqi in China's Xinjiang province.

It's a ritual for California governors. They lead a trade mission to a foreign capital, accompanied by company executives who pony up tens of thousands of dollars for the privilege. Several business deals are announced, making the trip seem like a success in bringing home the bacon for California.

Just as routinely, some trade experts call these missions a waste of time and money, saying the deals would have taken place without the governor's presence.

Gov. Arnold Schwarzenegger's trip to China this week probably will be no exception. Will it help California's economy? Or is it mainly politics?

Although the governor's entourage includes executives from a wide range of industries, from agriculture to film to financial services, one of his key goals will be to throw his support behind work that has been years in the making -- a campaign by California scientists and state officials to help China adopt policies to save energy and reduce the country's severe air pollution. In the process, the governor's aides hope, China will purchase millions of dollars of new environmental technologies from California firms, which have become world leaders in the field.

On Tuesday, the governor is scheduled to speak to an audience including several top Cabinet ministers in Beijing's Great Hall of the People during a conference organized by the Energy Foundation of San Francisco. Since 1999, the Energy Foundation has spent about $7 million annually in technical assistance to China. Working with scientists from the Lawrence Berkeley National Laboratory, the foundation has helped Chinese officials and utility executives adopt energy-saving techniques in power generation, industrial methods and household appliances.

Douglas Ogden, director of the foundation's China program, said Schwarzenegger is likely to urge China to imitate California's example of funding energy-efficiency programs by imposing a small fee on consumers' electric bills. In California, this 1 percent "public goods charge" pays for about $500 million annually in conservation programs carried out by the state and the utility companies.

China could raise as much as $1 billion per year by adopting a similar charge, which would pay for energy-metering technology and new home-appliance standards -- and perhaps lucrative contracts for Bay Area firms, said Mark Mosher, one of the organizers of the governor's China trip.

"California companies are world leaders in environmental and energy technologies," Mosher said. "We're trying to build relationships and long-term partnerships to sell energy technology and expertise. China has spent about $85 billion in the last five years to remediate environmental problems, and it's already planning to spend $300 billion over the next 10 years. California is well poised as a vendor, the place to go shopping as you grow that technology."

In a September visit to China, officials from the California Public Utilities Commission and the state Energy Commission signed a pact with Jiangsu province, a booming coastal region of 75 million people north of Shanghai, to provide expertise and training to utility companies and regulators. The state officials made informal agreements to expand those pacts to the rest of China.

Yet this week's trip is not scheduled to include meetings directly following up on this lead -- a shortcoming that is typical of the state's trade efforts, many trade analysts say.

"The governor will meet lots of senior people in China, top government organizations, but when he comes back, how can you tell what happened? What will be the follow-up?" asked Sean Randolph, president of the Bay Area Economic Forum. He noted that during 2003's budget crunch, the state abolished its 11 foreign trade offices, including ones in Shanghai and Hong Kong, and closed its Technology, Trade and Commerce Agency, which promoted international trade and investment.

Now, California has no officials working on such international links full-time, Randolph said. "How do we as a state capitalize on the investment that the trip represents? I don't know how much thought has been given to that."

Mosher, the governor's aide, acknowledges that the state lacks a formal structure to pursue the diplomatic contacts and deal making that could result from Schwarzenegger's trip. "That's up to the governor and the Legislature," he said.

For executives accompanying Schwarzenegger to China, the important thing is simply to get in the door. "The nice thing about these kinds of trade missions is that you have roundtables with government officials, and you can get high-level people whom you need to talk to at one location, which would be hard to do for a small California firm," said Phillip Alveda, CEO of MobiTV, an Emeryville firm that provides streaming television and radio service to mobile phones.

China is by far the world's biggest cell phone market, with 376 million cell phones in use at the end of September, according to government figures. Alveda's firm is hoping to persuade Chinese cellular service providers and television broadcasters -- all of which are closely controlled by the central government -- to sign up with MobiTV's service.

No matter how many new trade deals are reached during the governor's trip, California is guaranteed to continue running a huge trade deficit with China. California exports to China, including Hong Kong, rose by 24 percent in 2004, totaling $12 billion, making that country the state's fourth largest export market, after Mexico, Japan and Canada. No figures are kept for the state's imports, although with nationwide U.S. imports from China currently about six times higher than exports, California's deficit is believed to be similarly huge.

Bruce Quan, an attorney whose firm, Mohar Quan and Fanning, has offices in San Francisco, Beijing and Shanghai, notes that much of the state's prosperity is based not on exporting goods but on developing "human capital" -- the networks of scientists, inventors and entrepreneurs that stretch from the Bay Area's technology hubs across the Pacific.

Since the Sept. 11, terrorist attacks prompted a tougher U.S. stance on granting visas to foreign scientists who work on dual-use technologies that could be used in weapons systems, many Chinese executives, technicians and students have been refused U.S. visas. "Many of these people, who would be the future innovators and CEOs of Silicon Valley, instead are going to Canada, England or Australia, because they can't get visas to come here," Quan said. "If Schwarzenegger could go to Washington to lean on the State Department to give more visas to the Chinese, that would be the best thing he could do for our economic relations with China."

THE NATIONAL ENGLISH LANGUAGE NEWSPAPER
CHINA DAILY

Energy prices to be deregulated

By Fu Jing
November 14, 2005

Household utilities bills go up. Windfall-profit taxes are levied on coal and oil companies. And exporters who make products that guzzle energy in the manufacturing process are discouraged. All these scenarios will be played out in the coming years as the nation's top policy-making body deregulates prices of resources and makes energy consumption more productive. Shortage of resources amid rapid industrialization is forcing the National Reform and Development Commission (NDRC) and the Ministry of Finance to consider letting the markets dictate rates for utilities and taxing inefficient use.

That was the message on the weekend from a group of high-ranking officials, which will be incorporated in the national development blueprint for the next 15 years. Zhao Xiaoping, director of the NDRC's Pricing Department, said prices of products such as oil and coal would be liberalized soon by subjecting them to market forces. Deregulation is slated for land use, water, coal, oil, electricity, gas and other resource-related products, said Zhao, which means bills for household utilities would go up. "Our goal is to let prices reflect how scarce they are," said Zhao.

At a high-level forum on industry deregulation held earlier this month, Vice-Premier Zeng Peiyan is reported to have agreed on the reform strategy. Zhao's department, which is charged with supervising the prices of goods and services that are of special importance to people's lives and national economic security, organized the forum.

Industry experts said the deregulation is likely to increase prices which are lower than abroad of resources, and expressed concern that it could have a cascading effect on other goods and services and cause difficulties for low-income earners and vulnerable social groups.

For the energy industry, said Lou Jiwei, vice-minister of finance, the government's new measures include resource tax, windfall-profit tax and higher land-utilization fees. "We will collect windfall-profit taxes in some monopolized sectors within two years," said Lou. In the oil sector, Lou said, any amount higher than, say, US$40, could be considered a windfall profit and taxed accordingly.

The government will also increase resource utilization fees. For example, mine owners are charged only 1,000 yuan (US$120) annually for 1 square kilometer. "The government should raise that by a big margin," said Lou but did not reveal by how much. Measures will be taken to discourage exports of products which use too much energy, said Yang Weimin, another NDRC official. Ma Kai, NDRC minister, said conserving energy and resources by raising their prices is vital to sustain China's growing economy.

The country's top leaders have set two goals for the next five years: one is to double per capita gross domestic product (GDP) in 2000 by 2010 and the other is to reduce energy costs per unit of GDP by 20 per cent.

Some experts described the deregulation as "another milestone" in China's market-oriented reform. Since the reform and opening-up policies began in the late 1970s, the prices of most commodities and services have been deregulated; and now, market forces play a role in setting the prices of about 90 per cent.

THE NATIONAL ENGLISH LANGUAGE NEWSPAPER
CHINA DAILY

Five steps to prevent future energy woes

By Zhou Dadi
November 16, 2005

Editor's note: At a recent seminar sponsored by China Daily, researchers analyzed the influence of rising global oil prices on China, and gave their appraisals of the country's energy strategy. Here is one opinion:

Conservation should be the top priority in formulating China's mid- and long-term energy strategies. This is a necessary option dictated by the need for long-term harmonious and sustainable development. This is also based on the consideration of China's reality, reflecting

the country's determination to take a new type of approach to industrialization. Broadening the sources of supply and economizing consumption is the way forward.

The Fifth Plenary Session of 16th Central Committee of the Chinese Communist Party (CPC), which was convened recently, made it clear that resource conservation, and energy saving in particular, should be a vitally important aspect of the basic national policy.

In addition, in the CPC Central Committee's proposals for drafting the 11th Five-Year Plan (2006-10), there are only two quantitative development goals. One is that the per capita GDP of the country is set to double by 2010 compared with 2000. The other is that energy volume consumed in turning out a certain unit of GDP should drop by 20 per cent. This further shows that the central authorities have put the energy issue very high on the agenda.

Dictated by this, the annual energy saving rate is supposed to reach 4.5 per cent, which is a pretty hard task to fulfill. If we manage to achieve this goal, we will set a good example for other developing countries in the course of their industrialization. China simply cannot tread on the footsteps of others in its modernization drive, especially considering the country's specific conditions and the poor prospects of the world energy market.

Per capita energy consumption in China every year is currently 1 ton of standard oil, meaning other forms of energy such as coal and gas are also converted into oil according to their fuel value. But the average energy consumption of developed countries stands at 4 tons. In the United States, however, the per capita energy consumption is 8 tons of standard oil. China, considering its huge population, simply cannot afford that level of consumption.

Our goal is to realize modernization through low per capita energy consumption, which means much lower than the per capita 4-ton standard oil consumption in developed countries. As a result, we should not regard the growth of GDP as the only indicator to measure our development. Instead, sustainable development and rational energy consumption have become important targets.

First, in order to bring about an energy-saving and environmentally friendly society, we should strengthen energy management and refrain from launching large-scale energy-consuming industrial projects. The central government has decided that 10 major energy-saving projects will be launched during the 11th Five-Year period, bringing in billions of yuan in investment.

At the same time, education on energy saving and publicity campaigns in this regard should be strengthened in order to nurture energy-saving awareness among the general public. Energy frugality is not only a matter of industrial structure, but also a matter that will have great impact on the consumption mode of future Chinese society.

Second, energy-supply sources should be pluralized and the country's own energy resources including coal, petroleum, natural gas, hydraulic power and renewable energy resources should be tapped to the full.

Shuangyushu natural gas plant, Beijing,

The country burns 2 billion tons of coal yearly and no other form of energy is likely to replace it in the foreseeable future. So we should upgrade the mode of coal burning. If China's per capita coal consumption volume drops to the level of Europe, we would need to import more than 500 million tons of petroleum each year. This is an impossible burden given the current world oil market.

China currently consumes huge quantities of coal because it has no other choice. What we should do under such circumstances is to efficiently prevent coalmine accidents and pollution caused by coal firing, and use coal more economically. At the same time, development of nuclear power, hydraulic power and natural gas should be strengthened, as part of the effort to optimize our energy resource mix.

Renewable energy resources need to be tapped so that this kind of energy can play a supporting role and, in turn, help ease energy supply strains.

Third, international co-operation in energy resources is called for. When China goes upstream into the field of

international oil and gas exploration, it will help increase the global energy supplies and balance the market. Doing this will also help improve China's ability of withstanding the impacts brought by international oil price fluctuations.

In international co-operation, China should become involved in market competition, and pursue its own interests while avoiding international clashes. Besides, we should help improve the international energy-supply security structure. The current framework cannot be said to be sound and complete. For example, Asian countries do not constitute the focus in this structure, and it also fails to make provisions for developing countries' increasing energy demands.

Fourth, energy-related environmental questions should be dealt with. Besides our country's own energy-related pollution such as atmospheric pollution, we should also address bigger issues such as global warming.

Fifth, energy-related technologies should be developed in a bid to find a long-term solution. This includes energy-saving technologies, and substitution-energy technologies.

We believe that China can resolve the problems it is facing in energy resources, the environment, economics and society's sustainable development in a step-by-step way. We are doing our best to make contributions to the world's energy security while tackling our own energy questions in an overall way.

The author is director-general of the Energy Research Institute of the National Development and Reform Commission

THE NATIONAL ENGLISH LANGUAGE NEWSPAPER
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Nations step up energy co-op

By Wang Ying
November 19, 2005

China and the United States, the world's two biggest energy consumers, are stepping up efforts to address the energy shortage and environmental issues at both the government and commercial level. On the government side, six nations including the United States, China, Australia, India, Japan and South Korea, signed an accord to form the Asia-Pacific Region on Clean Development and Climate (APCDC) to collaborate to develop a new approach to climate change, challenging the Kyoto Protocol, which has encountered complaints from certain countries.

"This is the biggest move that involves both the Chinese and the US governments in working together on energy and environmental issues," Yang Fuqiang, chief representative of the Energy Foundation Beijing Office, told China Daily.

The United States, a trenchant critic of the Kyoto Protocol, along with Australia, has refused to sign up for emission targets for developed nations, which aim to cut greenhouse emissions by 5.2 per cent of 1990 levels by 2008-2012.

Compared with the Kyoto Protocol, the new official partnership puts focus on the research co-operation among these nations to find solutions to reduce environmental pollution and enhance energy efficiency. It also encourages companies with advanced technologies to invest in the new field, said Alan Oxley, chairman of Australia APEC Study Centre, in a recent interview with China Daily. The strategy in the Kyoto Protocol was to reduce emissions of carbon dioxide by increasing the cost of energy derived from fossil fuels, so it is not acceptable to economies unwilling to adopt strategies that would dramatically reduce growth, said Oxley.

"The new APCDC partnership offers a different approach to collaborate on technologies which produce

greater efficiencies in combustion of fossil fuels, expand the capacities of existing technologies, undertake basic research in new energy technologies and support the capture and sequestration of carbon dioxide," said a report published by the Australian APEC Study Centre under the Monash University, Australia.

The government-level collaboration under the new framework will include sectors such as energy efficiency enhancement and development of new energy sources like biomass, nuclear, wind and solar. Jiang Kejun, a senior research professor at the Energy Research Institute under the National Development and Reform Commission (NDRC), said the APCDC accord would serve as a good complement to the existing Kyoto Protocol. "They do not conflict - China has signed both agreements, and a combination of both frameworks will accelerate China's development to improve energy efficiency and the environmental standard," Jiang said. The six nations are now working on the research, Jiang said.

To cite an example, Yang told China Daily, China's Tsinghua University and Zhejiang University, two of the country's top engineering institutes, have joined hands with the U.S.'s Stanford University, in conducting research on the storage of carbon dioxide, a method to reduce the greenhouse gas emission.

Amid the government's ambitious vows to advance energy efficiency and protect the environment, business opportunities are also tremendous especially in the potentially huge Chinese market. "There will be a large cash inflow into China from those foreign firms with new technologies to cash in on the sectors of new energy and environmental improvement," said Oxley.

Zhou Dadi, director-general of NDRC's research institute earlier in an energy forum hosted by China Daily, said the country's energy conservation and renewable energy market will generate an investment worth hundreds of billions of yuan within the following five years. Yang said the areas that will witness massive foreign investment in the foreseeable future would be the clean coal technology and the hybrid-fuel automobile technology.

Peabody Energy, the world's largest private-sector coal company based in the United States, said in Beijing in September, that it is looking at opportunities for both coal trading and investment in coal mines here such as China Coal and Shenhua. The private coal firm will primarily bank on its new technologies to expand presence, it said.

U.S.-based GM and Ford, as well as Japanese Toyota, which have already developed hybrid car models, are also eyeing the Chinese market, "waiting for a thrust at a right time," Yang said.

CDTech, a US-based joint venture between the Shell Group and ABB Lummus Global Inc, said they are in talks with PetroChina and Sinopec for possible investment to produce clean fuels with greater energy efficiency and lower greenhouse gas emissions. The US company has already secured a plant with PetroChina in Southwest China, Yi-Gang Xiong, manager of technology and licensing at CDTech, told China Daily, on the sidelines of a fuels conference in Beijing.

The Energy Central Network

China Sets Renewable Energy Quota For Power Companies

January 13, 2006

China has told power companies that 5 percent of their electricity will have to come from renewable energy sources by 2010, as the country tries to diversify away from fossil fuels to power its fast-growing economy, a news report said Friday.

Zhang Guobao, vice-minister of China's top economic planning body, said the quota would increase to 10 percent by 2020, according to the China Daily newspaper. Wind and solar power are included but nuclear and hydropower are not, Zhang said.

"Although the proposed percentage might not sound like a big number, it will mean a substantial increase for China and it will boost the use of these new energies," Zhang said.

The quota applies to large power companies with an installed capacity of more than 5 gigawatts. Analysts estimate that China has 15 such companies generating about half of the country's power supply. China's larger power companies currently rely mainly on coal and other fossil fuels with renewable energy making up a small percentage.

Zhang said China wanted to reduce its reliance on polluting fossil fuels and secure a reliable energy supply for the booming economy, according to the paper. Financial incentives are also offered to power grids that use energy from renewable sources, Zhang said.

A solar PV installation at a school near the Great Wall.

Two of China's top power companies, Datang International Power Generation Co. Ltd. and China Huaneng Group, have both invested in wind turbines. Datang said it plans to cut its coal-fired power generation from the current 99 percent to 75 percent by 2014, according to the report.

Total installed capacity of all of China's power plants last year reached 508 gigawatts, up nearly 15 percent from the previous year. It is expected to exceed 1,000 gigawatts within 15 years.

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Buyers of small cars to enjoy big tax breaks

By Fu Jing
November 9, 2005

Buyers of small-engine, low-emission cars are set to get tax breaks as the government tries to reduce oil consumption and pollution.

The incentives, to be announced soon, will define what environment-friendly and economy cars are, Liu Zhi, director of the industry policy department of the National Development and Reform Commission, said at a seminar on cleaner fuel on Monday. For example, cars with an engine capacity up to 1.4 litres are now categorized as "economy automobiles." Other criteria include size, oil consumption, environment standards and safety indicators.

The State Council Development Research Centre, the government's top think-tank, has prepared a report on the tax breaks, Feng Fei, the centre's director of the industry department, told China Daily recently.

Buyers of low- or zero-emission vehicles will be exempted from taxes while bigger cars with higher emissions will be taxed heavily, he said. For cars with an engine capacity of more than 3.0 litres, the tax could be as high as 15-20 per cent, Feng said.

At the moment, vehicle tax is 3-8 per cent and is levied on auto producers before vehicles enter the market. "We suggest that tax be levied on car buyers directly, which will encourage them to consider buying economy vehicles with lower emissions," he said.

Liu said the tax incentives are aimed at lowering oil consumption and easing environmental pressures. Automobiles account for nearly one-third of China's oil consumption annually, according to official statistics. The centre predicts that by 2010, cars will consume 138 million tons of oil each year, or 43 per cent of China's total demand. The State Administration of Environment Protection has forecast that urban pollution will mainly be generated by cars unless the country is able to effectively control exhaust emissions.

However, economy cars in China have had a rough ride.

About 84 city governments nationwide forbid small-engine cars from entering downtown areas during rush hours. In Beijing, for example, automobiles with engine capacity lower than 1 litre are not allowed on Chang'an Avenue the main east-west road across the capital or on the fast lane on some expressways. Such restrictions are unreasonable, especially at a time when oil prices keep rising, Liu said.

A few months ago, Premier Wen Jiabao urged "all regulations that suppress the development of economy cars be dropped" as part of efforts to build an "energy-saving society."