

## **China's low-key jump onto biofuel bandwagon**

By Sunny Lee

BEIJING - While the biofuel craze is sweeping across the world like a wildfire, China appears to remain uncannily quiet, at least lately, just observing the new global obsession.

Beijing has been inconsistent in its love affair with biofuel. Last year, it held a big international conference on biofuel at Beijing's Tsinghua University, displaying great enthusiasm for it. Chinese scientists and government officials visited Brazil, a global leader in the use of biofuel, and came back with a clear determination that this would be China's energy future. But then, toward the end of last year, Beijing announced that it would reconsider bio-ethanol because of concerns about national food security.

Since then, the biofuel news coming out of China has mostly carried a tint of negativism. In March, the state-controlled China Daily ran a piece saying that biofuel causes more harm than good. In April, it quoted a Stanford University research study, saying that bio-ethanol may cause more smog and deaths. That was followed by another piece this month that quoted a United Nations report saying that the benefits of biofuel may bypass the rural poor.

Is the Middle Kingdom, often highlighted these days for its insatiable appetite for oil in Africa, unenthused about jumping on this new-energy bandwagon?

The truth is that China is keenly interested in the new energy source, but it is a contentious issue and the country has been fiercely debating the matter. "Arguments have never ceased in the Chinese science community on biofuel," said a senior Chinese academic.

China is not a newcomer to the global drive for biofuel. It has long been producing bio-ethanol from corn (maize), a national staple crop. However, as the scale of bio-ethanol production for industrial use dried up the corn supply for human consumption, "people began to worry about food security", said the scholar, who asked not to be named.

According to the scholar, that was "China's lesson with bio-ethanol". It turned out to be quite controversial. The collective emotional resistance to the idea of using food as fuel ran deep. After all, this is a country where close to 70% of the population are farmers and many of them are poor.

"China is a country where if the agricultural sector collapses, then the whole country collapses," said a foreign expert who works at the same Beijing research institute as the scholar cited above.

China experienced what many historians call the greatest famine in human history in the 1950s and 1960s. And while going through the Cold War, it felt more strongly the

importance of food self-sufficiency, elevating it to the level of national security. To this day Beijing orders provincial governments to reserve a certain amount of arable land for agricultural cultivation.

But that is by no means an indication that China is no longer researching and developing biofuel. "It's safe to assume that anything researched in other countries is also being experimented [with] somewhere in China now, including cutting-edge biofuel technology," said the foreign expert.

Indeed, Yang Xiongnian, a senior official with the Ministry of Agriculture, said China is "researching all kinds of biomass energy options, and others including sorghum ethanol and coal-based diesel oil".

Bioenergy has become a worldwide hot topic because of the limited fossil energy resources and their impact on the environment. Bioenergy is basically categorized into biogas, biomass (in the form of a solid, such as straw briquettes), and biofuel (in the form of liquid, such as bio-diesel and bio-ethanol).

China is the world's second-largest corn producer. In 2005, it churned out a record ethanol output of 920,000 tons from corn. In 2006, it exported 500,000 tons of ethanol, mainly to the United States. But domestically, China has been proposing to address increased fuel demand with the help of biofuel.

In its official 11th Five-Year Plan Guidelines, covering 2006-10, China plans to set aside US\$101 billion to meet 15% of its transportation energy needs through the use of biofuel by 2020, corresponding to 12 million tons. The country also plans to plant 13 million hectares of jatropha trees by 2010, from which 6 million tons of bio-diesel can be extracted.

All this indicates that although China officially says the issue of national food security should take precedence over the green agenda, the shift toward biofuel production has been quietly under way all along.

For instance, since 2000 the government has been subsidizing the production of bio-ethanol at four plants in Henan, Anhui, Jilin and Heilongjiang provinces, with a combined annual capacity of 1 million tons, or about 0.5% of the projected corn and wheat outputs in 2007.

China is also looking at sources other than corn to produce biofuel. It plans to set up a plant - the fifth biofuel production plant in the country - in Guangxi Zhuang autonomous region that will use cassava, a tropical plant, by the end of this year. The processing plant would have a production capacity of 200,000 tons a year and would be managed by the state-owned grain trader, China National Cereals, Oils and Foodstuffs Corp.

The National Offshore Oil Corp will also construct 100 bio-diesel plants across the country with different materials as feedstock.

Particularly noticeable is that some Chinese companies, with the help of the government, are establishing biofuel-production facilities abroad. One such company has invested in Nigeria some \$90 million for the production of 150,000 tonnes of cassava-based bio-ethanol. Beijing will provide 85% of the project cost while 15% will come from the Nigerian government.

But all this has been carried out rather quietly because of the national sentiment on biofuel. After all, for China, keeping up with the breakthrough green alternative is important, but equally important is raising the living standards of the country's many rural poor.

The issue is particularly relevant as the wealth gap between urban and rural areas is widening. In China, where "building a harmonious society" has become a popular national slogan as Beijing grows increasingly nervous about growing rural unrest, there is already a concern that the benefits of biofuel may bypass the rural poor to benefit only the urban rich who can afford expensive hybrid cars that run on the substance.

Thus it is imperative for China's biofuel development to make rural areas relevant by investing in them. With that in mind, the Ministry of Agriculture in 2000 began to introduce various "low-end" bioenergy technologies to rural areas and implemented new policies such as "ecological homeland" and the "plan to enrich people". One such option that has been aggressively promoted has been the use of biogas, which powers stoves, electricity, tractors and indoor lighting in rural areas.

Since 2003, biogas-plant construction in rural areas has been included in programs financed by Chinese government bonds. During 2003-06, 1 billion yuan (about \$130 million) was invested in household biogas production in rural areas. During the three-year period, the central government invested 3 billion yuan in biogas production and demonstration programs, benefiting more than 3.1 million rural households.

According to the Ministry of Agriculture, 15 million households in rural China were using biogas by the end of 2004. The ministry aims to increase this number to 27 million by 2010, which would account for more than 10% of all rural households.

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