Is clean tech China's moon shot?

Reuters

DAVOS, Switzerland (Reuters) - So far, wind turbines are not Sputnik. But one day they could be.

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The global race to develop clean technology is not just about who can build the best solar parks or wind farms. It is also shaping up as a contest between Chinese-style capitalism and the more market-oriented approach fancied by the United States and Europe.

The question comes down to this: will China's highly capitalized command-and-control economy trump laissez-faire in a low-carbon shift that is widely portrayed as the next industrial revolution?

The failure in Copenhagen to agree to replace the Kyoto Protocol with a new global climate treaty when it expires in 2012 has thrown the focus on national measures. And by almost all accounts, the Chinese are coming on strong.

Beijing's top leaders have made clear their intention to have their nation dominate this new industry, up and down the value ladder. And in their quest for the prize, they are not burdened by concerns facing their Western counterparts -- such as the impact of wind turbines on landscapes, higher energy prices for consumers, or investor returns.

"Developed markets need to be aware that China is gaining in this space," said David Russell, co-head of responsible investment at the 28 billion pound ($45 billion) British universities pension fund, the Universities Superannuation Scheme (USS).

The recession has made it tougher for Europe and America to effect meaningful climate policy change. And with most major nations piling on debt to stimulate flagging economies, politicians likely will find it harder to earmark additional voter money for clean technology.

Instead, recession-hit Western economies are hoping the private sector can plug an estimated worldwide $150 billion annual funding gap to avoid more extreme droughts and floods.

But investors almost always follow the returns, and if the performance is not there, they are not likely to risk their capital. For example, Britain's USS allocates about half a percent of its assets to low-carbon and renewable energy funds, not including its investment in conventional energy companies, which themselves will have some green tinges.

It's hard to imagine the West filling the clean tech funding gap if pension funds -- which are as influential as they are big -- don't pony up more.

Russell says he would like to do more, but like other fund managers he has an obligation to pension holders. He and other fund managers say they won't allocate more to green because their first duty is to guarantee payouts for their members, and while clean tech stocks can yield decent returns, they are often small and risky.

Since a trough in global equities last March, energy efficiency stocks have risen 126 percent and clean energy and technology by 88 percent, compared with wider global stocks' 70 percent, a Deutsche report found this month.

But there are limited opportunities for investors. Oil majors, for example, dwarf the asset value of green companies, and cleantech funds can't move the dial for the big funds whose participation is necessary to close the funding gap.

Advantage, China?

Fortunately for the West, it's not so simple.

WINDY PLAYING FIELD

The global wind industry highlights diverging tactics between China and the West in developing important new markets.

China is leapfrogging global wind power rankings with a combination of aggressive growth targets and domestic support. It has doubled its entire installed capacity each year since 2005, according to the Global Wind Energy Council (GWEC).

This month, the British government announced plans for 32 gigawatts of offshore wind by 2020 -- more than a third of its entire present electricity generating capacity now.

The plan also depends on 100 billion pounds of increasingly finicky private capital. And this is an election year.

"I think it will happen," said Benjamin Sykes, head of renewables technology at the UK government-funded Carbon Trust, which advises British companies on how to reduce their carbon footprint. "It's do-able."

Others are less sure. "I don't think it's achievable without a big redirection of investment focus," said investor Tom Murley, at private equity firm HgCapital.

Murley runs a 300-million euro infrastructure fund focused on renewable energy projects in western Europe, in wind power, biogas and solar. The fund has combined debt and equity assets worth over 1 billion euros.

"Will the capital flow to this sector? That's the big question mark. Offshore wind is still relatively new, as yet we don't really know how that equipment is going to perform in the long-run, whether that's really going to be a good investment," said Murley.

As he and other investors see it, British policymakers have to make a choice: either create bigger incentives for investors to underwrite offshore wind power or impose additional taxes on fossil fuels, which would make carbon-based energy less profitable.

CHINA INC.

Europe has the world's clearest, most ambitious renewable energy law, most analysts agree. A European Union directive requires that the 27-nation bloc get a fifth of its energy from renewable sources by 2020.

Germany is leading the charge there. It has the world's biggest solar power market because of aggressive market incentives that even Beijing has sought to mimic.

But China has its own distinct advantages. First and foremost is a "cozy relationship" between state-owned utilities, grid companies and banks, said Steve Sawyer, secretary-general of the Global Wind Energy Council.

China is expected to announce a target soon for about 150 gigawatts of wind power by 2020, which it would hit if it simply maintained present annual capacity growth, said Sawyer. The country also has two turbine makers, Sinovel and Goldwind, in the world top 10, according to the International Energy Agency.

Tao Wang, a climate policy expert with WWF China, said the country would this year develop its next five-year development plan to run from the start of 2011: this is likely to contain new steps to boost alternative energy.

"The Chinese government is essentially using the state banks and state power companies to support and foster a turbine industry," said Jefferies Bank analyst Michael McNamara.

It's not as if Western governments aren't involved in promoting wind turbines. The United States and Germany are the top two countries by installed power, and China edged out Spain into third place last year, according to GWEC.

How fast wind power develops in the United States depends on a climate and energy bill. If the United States passed a bill with an ambitious renewable energy target then "all bets are off" on the pace of growth, said Jefferies' McNamara.

But China has been on a tear -- last year it installed more wind turbines than any other country, says GWEC.

Furthermore, Western businesses are worried China is freezing them out of this lucrative market, preferring to nurture its own nascent industries without subjecting them to competition.

"The state-owned energy company sets up its development arm and they then go to a state-owned bank to get the funding, and they go to a state-owned grid company to make sure they can get a grid connection, and then lo and behold! If there's a bidding process, the state-owned turbine manufacturers happen to win the contracts," said McNamara.

That process has annoyed some Western manufacturers. They say that despite being forced to build local factories in China, because of a "local content" rule for installed turbines, they were still passed over on major contracts.

CAN THE MARKETS PREVAIL?

Some Western analysts still believe a markets-oriented approach works best and will ultimately prevail.

They argue that subsidized inputs will result in a less efficient industry, more focused on volume than cost and quality. "The best solutions come out of a competitive environment," said the Carbon Trust's Sykes.

The focus on adding new capacity has also run ahead of grid connections, meaning many Chinese turbines may never actually produce electricity.

"They will look like wind farms, and they may spin like wind farms, but there's no guarantee that they will actually work like wind farms," said Michael Liebreich, chief executive of the research firm Bloomberg New Energy Finance.

Moreover, some in the West believe the United States still has an advantage in innovation. The owner of patents, not factories, will likely earn the biggest profits and win the technology race.

In a Reuters poll of 41 U.S. venture capital investors, more than three-quarters of respondents said the United States would be the best market for cleantech over the next five years, and 88 percent believed America was the best place to base this business in the same time period. China ranked as the second best market (with 16 percent of the total).

"The world has absolutely no hope of making any substantial impact on global warming without major scientific breakthroughs, almost all which will come from United States' innovation," said Robert Nelsen, co-founder and managing director of Arch Venture Partners.

An undeniable edge for China is its huge pile of foreign exchange reserves. The nation's clean energy industry has recently benefited from Beijing's aggressive economic stimulus, which included funds for energy-efficient buildings.

Signs of an overheating Chinese economy may turn that tap down for a spell. By contrast, Western economies are expected to spend much of their green recovery cash this year and next.

FUNDING GAP

In recession-battered Western nations, and in China, the prime motives for promoting clean technology are jobs, profits and energy security -- not climate change. That leaves no guarantee that there will be enough investment to fight global warming.

An estimated $150 billion invested globally last year was only about half what is required annually by 2015 to avoid dangerous climate change, the International Energy Agency estimates.

"There is a big funding gap. I would say we need at least a doubling by 2015," said Cecilia Tam, citing draft estimates the IEA published in June.

If over the next 20 years the world is to boost renewable power, build greener buildings and roll out more fuel-scrimping cars including hybrid and electric models, it must invest more than an additional $500 billion annually, according to Tam.

Many forms of renewable power are expected to be more expensive than their fossil fuel counterparts for at least another decade.

Given the incompatibility of communist-style targets with western democracies, how can free markets mobilize more green technology cash?

CHINESE LESSONS

Western nations could boost clean investor returns with a tax on fossil fuels or guaranteed higher prices for renewable power. And aside from market levers, governments could adopt standards to make clean tech more attractive -- requiring homes to install smart meters, for example -- but rapid deployment doesn't seem politically palatable at the moment.

"It's worthwhile learning from the Chinese that these big transformations do require some exercise of public power," said James Cameron, vice-chairman of green investors and advisers Climate Change Capital.

Dutch pension asset manager APG has about 2 billion euros allocated to green investments, by the "broadest definition", said Rob Lake, head of sustainability. That compares with total assets of 206 billion euros.

"The reality at the moment is that investment in oil and gas is still attractive," said Lake.

But pension funds and other institutional investors can do more. Even if they don't put more of their own money into clean tech, they can use their clout to encourage more conventional energy companies to clean up, said Marcel Jeucken, head of responsible investment at the Netherlands-based, 86 billion euro PGGM pension asset manager.

Jeucken said his fund is "in constant dialogue" with Royal Dutch Shell, the oil major with a major investment in Canadian oil sands -- where oil production entails more carbon emissions than conventional oil fields.

"We used our shareholder rights wherever possible," he added. "Climate is one of our focus areas, and within that we are working on oil sands. We initiated a trip to the oil and fields last year."

TRY URANIUM?

A discouraging sign for investors who were hoping environmental markets would soon take off is the cloudy future of cap-and-trade plans. Such schemes force coal plants and other polluters to buy carbon emissions permits. They add to the cost of electricity, and are proving a hard sell in the United States.

Opposition to cap-and-trade among U.S. Republicans and some Democrats could block the roll-out of a federal trading scheme which would limit the further growth of global carbon markets, valued at around $125 billion last year.

Furthermore, last month's U.N. summit in Copenhagen was expected to unveil an expansion of global trade in carbon offsets between rich and developing nations, but in the end they won no explicit mention in a weak, final declaration.

What all that means for traders is clear: "To tell you the truth I'm starting to look toward other commodities -- uranium," said Laurent Segalen, head of emissions trading at Nomura.

Does all this suggest China is destined to win the clean tech race? Hardly, though it does seem to have a little more forward momentum than do its rivals these days.

But it's still very early goings, and there's more at stake than business success.

(Additional reporting by Chris Buckley in Beijing and Larry Aragon and Peter Henderson [3] in San Francisco; Editing by Jim Impoco and Sara Ledwith [4])
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