

Business

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Asia technology comes clean to provide green solutions

By Richard Anderson Business reporter, BBC News



Climate change sceptics might not like to admit it, but Asia is embracing environmentally-friendly technologies.

China is spending tens of billions of dollars every year on renewable energy projects - almost twice the next biggest spender in this field, the US - while South Korea's clean energy capacity more than tripled in 2009.

Asia is not, then, the environmental laggard some in the West would have us believe.

In fact, growth in what the industry calls the clean tech, or environmental technology, sector looks set to take off.

The figures speak for themselves.

The population of Asia is expected to grow at more than double the rate of Europe and the US in the next five years, during which time the region's economy should grow four times more quickly than Europe's, according to the International Monetary Fund (IMF).

This helps to explain why demand for energy in Southeast Asia should rise by 76% in the next 20 years, the IMF says.

And an increasing proportion of this energy will come from clean technologies - governments and indeed peoples demand it.

"Asia is really interested in the environment - you just have to look at China's latest five-year economic plan [which commits to stringent renewable energy targets, among others] as well as the tremendous demand from people due to pollution," says Vivek Tandon, co-founder of Aloe Private Equity, an investment group specialising in Asian clean tech.

In fact there are three major drivers behind the push for green technologies in Asia, according to Johanna Klein, investment officer at the Asian Development Bank: energy security, environmental degradation and, perhaps most importantly, the need for new industries to create new jobs.

'Massive gap'

But the introduction and innovation of new technologies to bring about renewable energy development, better waste management, water treatment and the like require private investment - public money can only go so far.

According to Ms Klein, the global clean tech market is currently worth about \$500bn, with Asia already accounting for \$100bn of this total. There are however, just 17 specialist funds worth \$1bn investing in environmental technologies in the region.



Pollution is one of many drivers of clean technology in many parts of Asia

New technologies, or at least new to the region, need investment, and there is a huge thirst for money from emerging clean tech companies.

As Ms Klein says: "There is a massive supply demand gap".

But this gap may be starting to close.

Between 2002 and 2005, there was very little money going into Asian clean tech, Ms Klein explains. In the following two to three years, interest in financing clean energy projects picked up, only to be stopped dead in its tracks by the financial crisis.

Now more investors are looking once again to take advantage of the opportunities on offer, with some more willing to look at early stage projects.

Clean clothes

Mr Tandon is one such investor. He sees expected returns on investment of between 22% and 26% on Asian clean tech projects, compared with a return of about 8% or 9% on European equivalents.

His private equity fund has backed a number of projects in Asia, with Polygenta one of the most successful.

This company uses patented technology to recycle plastic bottles to make polyester fibre. Using what it calls the Renew process, clear and coloured bottles take the place of many of the petrochemicals used in standard polyester production.



The Polygenta processing plant in Nashik, India, recycles plastic bottles to make polyester fibre

In other words, it makes clothes out of plastic bottles.

The process is more cost efficient and the resulting polyester is of higher quality, the firm claims. As a result, it can charge more for it.

The company's current plant operations in Nashik, India, constitute 6% of global sustainable polyester production, it says, a figure the firm hopes will grow rapidly in the coming years with more investment.

Other investments in the Aloe portfolio include Greenko Group, which owns and operates biomass energy plants in India, and Longmen Group, which drills coal seams to extract methane gas in China.

Many of the technologies used in Indian clean tech projects in particular are imported from more developed economies and adapted for the local market.

It is this adaptation process, says Mr Tandon, which is the key to success.

Working well with local partners, and acknowledging the key role they play - as well as rewarding it financially - is essential. Too many western companies simply export technologies and expect to take home the lion's share of the profit, he argues.

Chandra Shekhar Kundur, general partner at Ventureast, a fund manager specialising in Indian clean tech, agrees.

"The Indian market is not ready for innovation yet. It's about adopting and adapting foreign technologies and utilising them in the local environment," he says.

Electric power

China and some other Asian markets are a little different.

Here, inventing new technologies is central to the success of clean tech projects, although this often involves collaborating with western partners.



China is powering ahead with electric vehicles, which form part of the state's five year economic plan

As Dr Eric Wang, managing partner of Grand River Capital, a venture capitalist group that runs green funds in China, explains, Asia has a long history of technological innovation.

For example, the touch-pad technology that underpins iPads and iPhones originated in Taiwan, as did the LED technology used in all laptops, he explains.



China is investing heavily in solar power generation as well as other renewable energy sources

"Chinese, South Korean and Taiwanese companies made mass production of many of these technologies possible," he says.

And now this technological know-how is now being used in the clean tech arena, particularly in China.

Nowhere is this more obvious than in the development of more powerful batteries for electric vehicles. As part of the government's five-year plan, for example, Dr Wang says there will be 3,000 electric buses on the streets of Qingdao in the next two to three years.

This is why one of Grand River's favourite investments is Advanced Lithium Electrochemistry, which manufactures Olivine powder, a key raw material for a new type of lithium battery used in electric vehicles.

The fund also has a number of investments in solar technology companies, such as Gintech Energy Corporation, which designs and manufactures multi-crystalline solar cells from specially processed silicon wafers, and Solapoint Corporation, which has more than 20 patent applications for solar-cell technology.

Asian clean tech companies are clearly powering ahead, whether it be through adapting existing technologies to local markets or by innovating entirely new processes designed to protect the environment.

Indeed Mr Tandon argues that the clean tech sector mirrors a wider trend in the global economy.

"China and Asia dominated world trade for 1,500 years, so maybe we are just returning to equilibrium, where the short period of western domination will be seen as little more than a blip".

The potential is clearly there, although, for now at least, a little more western investment might be needed to unlock it.