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## **Industrial gas firms see green as the color of money**

Peter Nowak in Guangzhou

Opportunities beckon in growing drive to reduce pollutants and meet regulations

Industrial gas companies are finding they can make money out of thin air in China, thanks to a growing awareness of the environment. Atmospheric gases such as oxygen, nitrogen and argon - used in stainless steel products such as golf clubs - are in rising demand because they can result in much cleaner manufacturing.

'It's a paradigm shift,' says Stephen Lee, chairman of Hong Kong-based Allied (International) Process Engineering, which offers industrial gas technical services on the mainland.

'We're looking at a jump of several hundred per cent in revenue over one or two years.'

He says Allied Process is finalising several renewable energy projects, including wind-power stations in Harbin and south China, as well as hydrogen- and solar-power systems in Hong Kong.

New uses and opportunities for gas firms are emerging as manufacturers look for ways to cut down on pollutants and meet regulations.

Allied Process has traditionally been involved in building plants for chemical firms and supplying them with their gas needs. But for the past year it has been shifting toward renewable energy projects - powered by hydrogen, for example, which is cleaner and much more plentiful than oil or coal.

Mr Lee says this comes ahead a new energy policy being drafted by the mainland's

National Development Response Commission.

He expects China to reform its environmental law within the next two years.

Robert Eng, southern China general manager for Hong Kong-based industrial gases supplier Air Products Asia, says environmental applications in China will account for up to a third of his company's market - or about US\$100-million to US\$300-million - in the next 10 years.

Traditionally, Air Products has focused, for example, on selling nitrogen for use in electronics manufacture; hydrogen for use in metal processing; and liquid nitrogen for freezing food. But Mr. Eng says these markets are 'somewhat mature', while environmental applications represent some promising growth prospects.

Vehicle fuel cells and glass manufacturing are of particular interest to Air Products. As a big supplier of hydrogen - the main gas used in hybrid fuel cell-powered vehicles - Air Products is well positioned, given China's already demonstrated desire for cleaner-burning vehicles. Mr. Eng says Beijing's new natural-gas-powered bus fleet is just the tip of the iceberg.

Use of pure oxygen in the glass-making process is going to grow quickly as the government focuses on controlling noxious gas emissions. Traditional glass furnaces use plain air - composed mostly of nitrogen - and oil for fuel. Nitrogen and sulphur are big pollutants and moving to an oxygen-burning furnace, Mr. Eng says, can cut down both problems.

About half of United States glass producers have already moved to these cleaner and more fuel-efficient furnaces, but only about 2 per cent of Chinese manufacturers have done so.

As similar emissions rules come into effect in China, Mr Eng says, mainland manufacturers will see the benefit of switching. The only question is when. The environmental regulations are in place, but enforcement is another matter.

'The regulations are in general on paper, but depending on your relationship with the local [environmental agency], you can have a pretty flexible schedule for meeting your requirements,' he says. 'They tend to adopt very strict regulations, so then there's a practicality issue. In theory it's very difficult to meet, so it gives them room to negotiate.'

Dr David Harper, a partner with global environmental consultants ERM Group says: 'Beijing is where the focus is right now that's driving all the legislation - the build-up to the Olympics. They're determined that Beijing will come out of that very well, and the rest of China will benefit from that.'

Dr Harper says the next few years will be crucial for environmentally attuned companies looking to cash in.

'There's a window of opportunity where you can get in and make your money over a five-year period but, beyond that, once they figure out how to do it, the Chinese companies will be doing it.'

**Richard McCombs**, president of California-based MBA Polymers, isn't waiting for regulations to improve. 'There's always a risk when you depend on government mandate or regulations to make money, because governments can change, regulations can change, enforcement can change,' he says.

MBA, which specializes in recycling plastics, is opening its first plant in Guangdong in the third quarter.

'We're not really relying on the regulations to build our business model, we're relying purely on an economic model,' Mr. McCombs says. 'It just so happens that we're in a very attractive environmental space, so we have a double bottom line - we hope to make good money and we hope to achieve good environmental results.'