

IPO Review:

Why this refrigerant maker's climate strategy deserves a cool response

WITH A MARKET share of about 26 percent, the Dong Yue Group (HKSE: 189) is China's largest manufacturer of refrigerants, which accounted for 54 percent of its total revenues in 2006. It is also a major producer of fluoropolymer.

The company realises that HCFCs (hydrochlorofluorocarbons), its main refrigerant products, will be phased out in the future, as stipulated in the Montreal Protocol, an international treaty to protect the ozone layer by phasing out ozone-depleting substances. However, the products it intends to replace them with – HFCs – are also known to cause global warming and contribute to the climate change crisis, and they must likewise be phased out under the terms of the Kyoto Protocol. In fact, the global warming potential (GWP) – a measure of how much a greenhouse gas contributes to global warming – of HFCs is up to a thousand times greater than that of CO₂, the best-known greenhouse gas (see chart below).

While HFCs remain very popular substitutes for HCFCs in the Japanese and US markets, making them is undoubtedly becoming an increasingly risky business. By focusing on HFC production, Dong Yue is obviously putting all of its eggs into one basket.

the European market and which are cost-effective alternatives. Natural refrigerants are naturally occurring substances, such as hydrocarbons, CO₂, ammonia, water and air – the so-called 'Gentle Five'. Their advantages over HCFCs and HFCs are: (1) they are ozone and climate-friendly and (2) they are extracted from the natural abundance of raw gases that exists on the earth, whereas HCFCs and HFCs require expensive processing and licensing. For more information about natural refrigerants,

because they are one of the six greenhouse gases listed in the Kyoto Protocol, and it is widely assumed that their use will be curbed. Moreover, Greenpeace's interviews with an industrial specialist reveal that some individual sub-sectors have already voluntarily started to move away from HFCs. For example, 75 percent of the domestic refrigerators now made in China use Greenfreeze, a natural refrigerant that Greenpeace introduced into the European and Chinese markets in the mid-1990s.

A number of European countries, including Austria, Denmark, France, Norway, Switzerland, Germany, and Great Britain, have already introduced legislation that either bans or places heavy penalties on the use of HFCs. In addition, the joint efforts now being made by ASEAN members to tackle climate change are likely to lead to emission caps that will further darken their future outlook.

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3) The implications of global climate politics. Future climate negotiations are likely to have an adverse effect on Dong Yue's income from a project that capitalises on the Kyoto Protocol's clean development mechanism (CDM). According to its prospectus, the company derives revenue by capturing the HFC-23 that it generates in the process of producing HCFC-22. The GWP of HFC-23 is 12,000 times greater than that of CO₂. The CDM allows captured HFC-23 to be turned into certificates of emission reduction (CER) that can be sold to developed countries. As the prospectus notes, leveraging on the

Product	Classification	Ozone-depleting Potential (ODP)	Global Warming Potential (GWP)	
			20 Years	100 Years (2007 update)
CO ₂	Natural Refrigerant	0	1	1
Ammonia	Natural Refrigerant	0	0	0
R22	HCFC	0.055	5160	1810
R142b	HCFC	0.08	5490	2310
R152a	HFC	0	437	124
R134a	HFC	0	3830	1430
R32	HFC	0	2330	675
R125	HFC	0	6340	3500
R415B	HFC/HCFC	0.014	1620	550
R418A	HFC/HCFC/HC	0.053	4970	1740

To get a clear picture of Dong Yue's future business potential, it is important to look at the company's climate strategy. While such a strategy will not generate material upside in the near term, it will have a major impact on the company's growth in the long run.

Some factors that need to be considered are:

1) The availability of newer products that compete with HFCs. These include natural refrigerants that are already used widely in

please see <http://www.greenpeace.org/raw/content/china/zh/reports/natural-reg.pdf>.

2) Sector trends. China is the world's biggest manufacturer and consumer of HCFCs. Dong Yue's emphasis on HFC production indicates that the company does not believe the Chinese government and the market will automatically phase out HFCs in the near future. However, as previously mentioned, a cloud already hangs over the future of HFCs,

Climate Change

CDM entails a number of business risks, such as a potential increase in the tax rates the company pays and the imposition of an emission cap by the Chinese government. Another risk concerns the assessment of GHGs generated by industrial production for CER purposes. In order to register and sell more CERs, some Chinese chemical plants are reported to be adapting their facilities so that they deliberately release up to twice the amount of HFC-23 (see <http://www.reuters.com/article/email/idUSL137011320070813?sp=true>). The controversy about such activities is certain to increase in the near future, and it will sharply reduce the income Dong Yue derives from the CDM.

Investors who are concerned about environmental risks and climate change should certainly pay close attention to these troubling aspects of Dong Yue's business strategy. In fact, they are probably doing so already. Its shares closed 10 percent below their IPO price on the first day of trading, and they have fallen by nearly 30 percent since then.

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*Natural refrigerants are already used widely in the European market.
They are cost-effective alternatives to HFCs.*

Greenpeace in China

Greenpeace China was established in Hong Kong in 1997 and has since set up offices in Beijing and Guangzhou.

China's phenomenal economic growth in the last two decades has brought unprecedented environmental threats to the country and the world. Greenpeace believes that development should not come at the expense of the environment. We are committed to seeking and building a green growth pattern, together with the people of China.

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