STRATEGIES FOR SUCCESS
in international cogeneration markets

International markets for cogeneration and decentralized energy are poised to enjoy a period of expansion over the next few years, but modern markets are complicated and volatile. Risk management and effective management of 'boom and bust' cycles and variable regulatory environments will all be important. To be successful, suggest Michael Brown and Simon Minett, companies will need to develop strategies based on thorough market knowledge.

An expanding market is no guarantee that all suppliers to that market will flourish. This will be so especially where different market segments grow unequally, or have varying needs. The airline industry is a fine example. Air passenger traffic will almost certainly continue to expand in the future, yet the two main aircraft suppliers, Airbus and Boeing, have radically different strategies for capitalizing on this market expansion. The enormous new Airbus A380 can carry 555 passengers and its maker believes that there is a market for over 1100 of these giants; Boeing believes that the market is less than 350. Airbus believes that the current passenger model of connecting through major 'hub' airports will continue to be reinforced; Boeing thinks it will decline as more passengers prefer to fly non-stop on a point-to-point basis with more frequent services. One, or both, of them is likely to be wrong, perhaps very wrong. One of them certainly has not done its homework properly - it has the wrong strategy.

There are lessons here for the many hundreds of companies worldwide that operate in the cogeneration and decentralized energy (C/DE) sectors, whether as project developers, equipment manufacturers or service providers. In our view, the future prospects for this market are very good; but to capitalize effectively, market players will need to develop and implement well informed strategies that are based on a deep knowledge of the ever-changing market conditions under which C/DE operates. This article provides examples of some of the less familiar pointers to C/DE businesses as they seek to capitalize on the promising market conditions that may be just around the corner.

MORE VOLATILE MARKETS

Emerging optimism for the C/DE market is widely based. There are certainly increasing indications that international markets for C/DE projects, equipment and services are picking up. While the overall picture remains patchy, confidence is beginning to flow back into the sector. Looking ahead, there are expectations that the period 2005-2010 might be good for the industry, possibly very good. Say it quietly, but there may even be a worldwide boom.

But the market environment for C/DE in many countries during this period will be quite different from that of the 1990s when many markets were last buoyant. The emergence of more competitive energy markets, greater uncertainty about energy pricing and ever-changing policy priorities may make the challenge more complicated rather than less. To spice this mix further, C/DE businesses now have abundant opportunity to extend their international reach, but this will require greater knowledge of foreign markets and the strategies required to break into them.

Traditionally, the price of electricity, and in particular the relationship between this and the price of the fuel, has been the main signal for C/DE businesses. The higher the power price, the greater the incentive to generate it on-site. This indicator still holds true almost everywhere, but with energy market conditions changing fast, and becoming more complex, developers and others should try to understand a variety of other factors.

AVOIDING THE 'BOOM AND BUST' TRAP

A factor of new importance is the heightened tendency of C/DE markets to go through 'boom and bust' cycles that track similar cycles in the overall power market. Such cycles are features of commodity markets and are caused when periods of over-investment lead to falling prices, creating periods of under-investment and product scarcity (in this case electricity-generating capacity) that in turn leads again to rising prices and a stampede to invest. This is an increasingly common phenomenon in the world's power markets - as many ex-companies in the C/DE sector could testify. The recent market downturn in Europe has been a destructive period for many companies in the sector.

As improved market conditions return to world markets, companies that want a sustained presence in these markets will have to anticipate 'post-boom' downturns, read the signals and respond to them if they are not to be brought down with the rest. One way in which the new tendency can be exploited is to sell to energy users the benefit of C/DE projects in reducing exposure to the boom-bust price cycle. On-site cogeneration, in particular, offers a potentially useful hedge.

GEOGRAPHICAL SPREAD

While some providers can reduce risks through supplying to quite separate sectoral markets (some gas turbine producers also serve the oil and gas industry, for example), geographical flexibility provides one of the best possible hedges for the sector in reducing exposure to market collapses in a country or region. This may not be sufficient to offset losses when a major world market (such as the US) goes into recession, but it can make the difference between survival and extinction. On one level, an obvious example of such a strategy would be to ensure a market presence in both Europe and North America. Many US state markets continued to be buoyant well after the collapse of activity in Europe from 1999 to 2003. European C/DE businesses would have done well to have extended activity to the US while the going was good in the late 1990s. We know of one major developer, a former client, that looked very closely at this option in 2000, only to lose interest as its European market went into decline. That company no longer has new business activity in Europe, and missed considerable market opportunities in California and elsewhere.

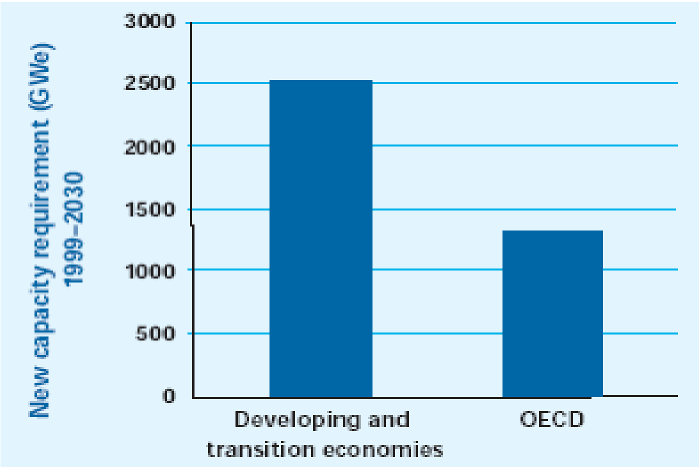

Figure 1. Emerging markets cannot be ignored.
Source: International Energy Agency, 2003

Similarly, companies operating only in North America, where the power market is still recovering, would do well to take a long hard look now at some of the leading European markets in anticipation of the expected upturn over the next few years. While there is certain to be considerable diversity of market activity across the continent, correct identification of the most favourable markets should bring significant business reward.

Equally, some of the world's most important emerging economies are increasingly providing an option for companies looking to extend their products and services to new markets. China, Brazil, India, Thailand, Mexico, Russia and many other countries are already providing new opportunities. The potential scale of this opportunity may dwarf the less risky and more familiar markets in Europe and North America (see Figure 1). Investors will need to weigh up these factors and identify markets carefully, not least according to the ease of market entry.

RISK AVERSION TO CONVENTIONAL CENTRAL PLANT INVESTMENT

The successful anticipation and management of 'boom and bust' and overseas opportunities will be an important hallmark of successful C/DE strategies going forward. Another will be the extent to which companies can identify the global markets that show signs of risk aversion to large power projects, the main competition to C/DE in satisfying demand for new capacity. Since 2000, enthusiasm for investment in large central plants has been in decline in many countries. The buoyant years of the late 1990s led to significant investment in such plants throughout the world, but many have not been profitable. Fingers have been burnt and caution remains.

There are indications that the caution will be slow to evaporate. The chief executives of the major UK generators announced in March that they had no plans to consider a return to investment in gas-fired CCGT plant - the only central plant option commercially available to those companies.

In Brazil, the experience of investors in large thermal plants over the past few years has not been successful. Indeed, that country faces an imminent capacity crunch and it is becoming clear that cogeneration, based on natural gas and biomass, offers the best commercial option, at least on the supply side, for avoiding it.

In emerging markets as a whole, country risk remains a potent challenge. The sheer scale of investment required for new central plant and the accompanying network infrastructure increases the potential exposure dramatically. The notorious Dabhol project in India is one of the best known of dozens of examples around the world of a big project that can go horribly wrong on a vast scale. For smaller C/DE plants, this risk is significantly reduced, not least for cogeneration plants that have heating/cooling as an additional value stream. C/DE providers can serve themselves well by identifying those markets where the relative risk perception will favour their products and services.

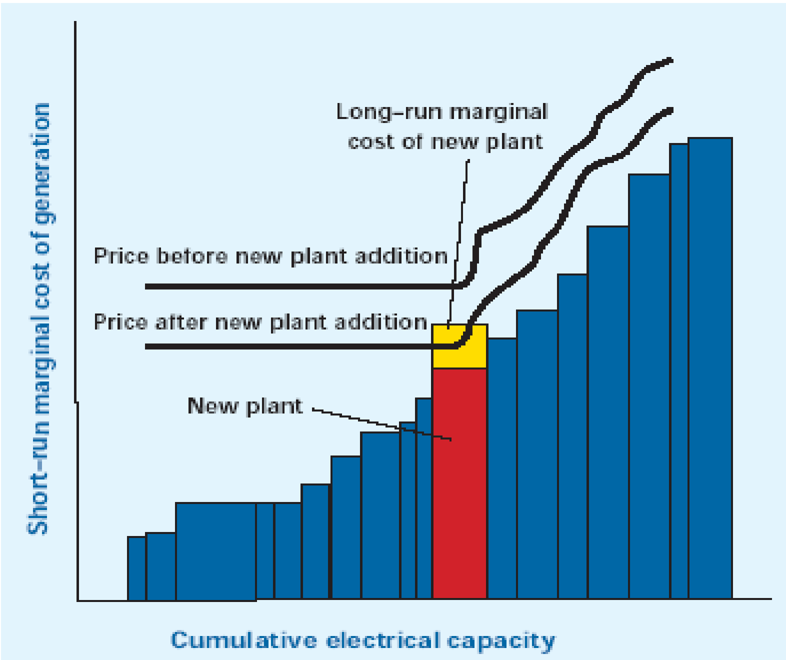

Figure 2. The growing risk of investment in large plants.
Source: Boston Consulting Group

In OECD countries, a parallel risk differential has developed. As energy markets become more commercially driven, and therefore more volatile, investment uncertainty increases. This is an issue that affects all plants, big and small, but the scale of investment required for the larger plants means greater risk as well. As Figure 2 shows, the growing vulnerability of central plant is manifested when market prices are forced down to levels below the long-run marginal cost of new plant. Big plant investors lose their shirts in these conditions - but they are becoming a fact of life in many markets.

This is likely to become an important driver for C/DE investment for years to come, though again there will be significant variation between markets and providers will need to make assessments to be sure they are targeting the right countries and regions.

ASSESSING ENVIRONMENTAL RISK

In Europe, the introduction of the EU emissions trading scheme from 1 January 2005 will add a further complication for those developing effective market development strategies. While coal-to- gas fuel switching represents an important opportunity for emissions mitigation, this will make little difference to the overall level of installed capacity. However, investment in central CCGT to satisfy new demand will be a less attractive option, in carbon allowance terms, than investment in higher-efficiency C/DE. Cogeneration also looks likely to secure benefits unavailable to central plant from some additional favourable treatment in respect of new entrant allocation. In Europe, growing carbon risk could become a new disincentive for investment in conventional thermal plant - and this will certainly differ from country to country.

Overall environmental risk provides another indicator of emerging competitive advantage for more environmentally friendly power generation. Innovest, a financial services firm, has recently assessed the US Electric Power sector on issues including environmental risk, corporate governance, and product and service risk. The 13 firms with above-average ratings outperformed the lagging group by over 900 basis points in total shareholder return over the past three years.

Table 1. How liberalization and restructuring complicate opportunities for cogeneration and decentralized energy

China and Brazil	In China and Brazil, among many others, there are new energy laws that will have a profound influence on the operation of the power market and the scope for investment in C/DE. In some of the new frameworks, cogeneration or distributed generation is explicitly defined and accounted for. These laws need to be tracked and assessed - providers cannot afford not to give great scrutiny to these developments.
Russia	In Russia, radical plans for transforming the national electricity market have been a very long time in gestation and this creates uncertainty. In the meantime, the country is running short of electricity fast and users are turning to on-site sources to secure their supplies. This is a supreme example of a market where delay in introducing new policy direction creates investment hesitation and the evolution of a capacity shortfall - an opportunity for C/DE.
Europe	In Europe, with the dramatic expansion in the EU from 15 to 25 countries on 1 May 2004, the various EU directives relating to the opening up of energy markets have new reach. As national monopolies break up and competition increases, the conditions for on-site generation are changing fast. The new EU Cogeneration Directive will create a clearer framework for the treatment of C/DE, but a great deal will still be left to individual countries.
North America	In North America, states and provinces are also moving at speeds ranging from that of a stationary tortoise to the fastest of hares. The regulatory conditions for C/DE vary wildly and market development reflects these conditions closely. One might try to understand the 'US market for cogeneration', but face the challenge of understanding 50.

If this trend gets locked in, shareholders will want to know why companies continue to invest in high-emission plants. With power plant lifetimes exceeding 25 years, investors that take a long-term view will increasingly want to be sure that there are no unpleasant surprises in store. A sure way to keep those risks to a minimum is to reduce or avoid investment in big projects with high emissions or an increased level of environmental risk. C/DE projects may have risks of their own but they are almost always a better environmental bet than conventional central plants. In some countries, this issue may generate even more inertia among investors in major power projects.

REGULATORY PATCHWORKS

Probably the most difficult area for C/DE providers to monitor, yet probably the most crucial to their prospects, is the policy, regulatory and fiscal environment for on-site generation projects. There are many issues here, including grid interconnection and access issues, buy-back rates, back-up charging structures, licensing, taxation, environmental permitting and fuel pricing. All in all, they make up a constantly changing patchwork of barriers and incentives for projects that can make or break an investment decision.

As markets liberalize and restructure, these issues are not getting any simpler. There is also significant differentiation between markets: not only between countries, but within them as well, most notably in more federalized countries including the US, Canada, India and Brazil. Examples of the challenges and opportunities facing C/DE strategy development are shown in Table 1.

It is also not simply a case of recognizing the barriers, but of identifying the incentives. There are many examples, including the Netherlands, India, some US states, Japan, Brazil and China, of specific incentive policies for C/DE that can turn a moderate market into an exciting one. Providers need to watch for these positive developments with as much care as they track regulatory conditions and prospects, though they can sometimes disappear as fast as they are introduced.

CONCLUSION

An expanding global market for air passengers will not guarantee market success for both Boeing and Airbus, since one, or both, will in time be shown to have adopted the wrong market development strategy. Equally, despite the fact that C/DE markets are poised to enjoy a period of expansion over the next few years, not all companies will be able to ride the wave. Those that can develop effective strategies based on thorough market knowledge will certainly maximize their chance of strong business success.

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