



Turning up the heat

An insight into M&A
in the renewable energy sector in 2008

ADVISORY





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Foreword

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Our report into M&A in the renewable energy sector has revealed an explosion in the number of deals. Analysts estimate that 2007 saw US\$55.7 billion in M&A transactions - up by 47 percent on the year before.

While the reasons for this are varied - power generators are buying to meet regulatory targets, oil and gas majors are buying in the hunt for cleaner fuels and financial buyers are searching for stable long-term cash flow - the overall effect has been to push valuations up to record levels. In fact, 50 percent of respondents, and nearly two-thirds in Europe, agreed that there is a real risk of a bubble in the renewable energy sector.

Despite this, the survey shows that competition for deals is likely to increase, as will the pace of consolidation, but at what cost? Some industry players appear to be ignoring the many risks involved in investing in renewables, such as the ability of national governments to change their green energy policies. On a more micro level, there are other issues including the fact that many sites have difficulty connecting to electricity grids and there is a shortage of turbines to

build new wind farms. All this is also putting aside one of the most basic risks of all - that investors are putting money into technology that could become obsolete very quickly.

Yet, while teething problems certainly do exist, early investment made now in renewables could prove an insightful move in years to come. It is clear energy companies and investors should review their acquisition strategies and evaluate the risks and opportunities. The activity that I'm currently seeing points towards exciting times ahead for all those involved in the renewable energy sector.

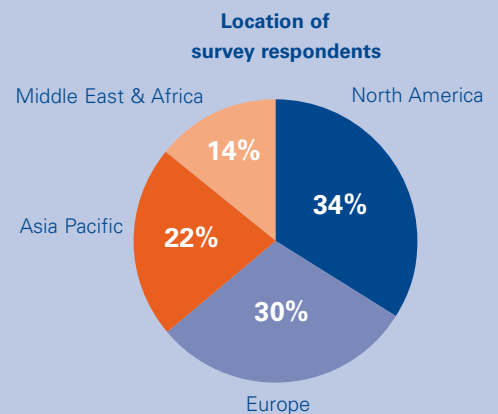
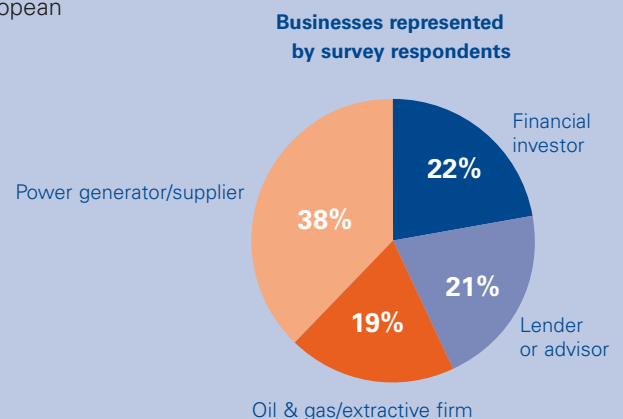
A handwritten signature in blue ink that reads "Andrew Cox". The signature is written in a cursive style and is followed by a long horizontal line that extends to the right.

About the research

This report was written in co-operation with the Economist Intelligence Unit and is based on a survey of 202 senior executives from across the global energy industry, conducted in February 2008. Respondents were senior representatives, 50 percent with executive boardroom positions, from power generators, oil & gas majors, renewable energy suppliers, energy distributors and financial investors. A range of company sizes were represented, including some of the biggest, with one in five having revenue of more than US\$10bn. About 35 percent of respondents were based in North America, 30 percent in Europe and 22 percent in Asia-Pacific.

Supplementary to the survey results, interviews were also conducted by the Economist Intelligence Unit with the following senior executives:

- **Babcock & Brown Wind Partners** – Geoff Dutailis, COO
- **Iberdrola Renovables** – Estanislao Rey-Baltar, CFO
- **Macquarie Group** – Ian Learmonth, Executive Director, European Renewables Business
- **Scottish and Southern Energy** – Rhys Stanwix, Head of Energy Strategy
- **Suzlon Energy** – Vivek Kher, Head of Communications
- **Viridis Clean Energy Group** – Ed Northam, CEO



Source: The Economist Intelligence Unit 2008

Executive summary

The rate and size of mergers & acquisitions (M&A) activity in the renewable energy sector has been growing rapidly. Analysts estimate that 2007 saw US\$55.7bn in M&A transactions - up by 47 percent from 2006. Although most deals are relatively small, blockbuster transactions crop up regularly: during 2007, for example, Portugal's EDP snapped up US-based Horizon Wind Energy for US\$2.15bn, E.ON entered the US market with the US\$1.4bn acquisition of Airtricity North America, while India's Suzlon entered the European market by acquiring the German firm, REpower, for US\$1.6bn. Big deals are still happening in 2008: Scottish and Southern Energy (SSE) recently bought the Irish firm, Airtricity, for about US\$2.2bn, while Babcock & Brown Wind Partners has announced its intention to sell off some of its European wind assets, which market speculation predicts could generate proceeds of €3-4bn. Ed Northam, CEO of Viridis Clean Energy Group, talks of an "explosion in interest" in the market. But where is all the activity headed?

Industry executives believe a bubble may be developing.

One-half of the respondents polled for this report agreed that a bubble in the renewable energy sector is a "real risk," with high valuations noted as being by far the leading cause for the failure of M&A efforts in the last three years. Valuations have continued to rise and there have been a number of deals recently completed where enterprise value per operating MW acquired has hit the US\$4-5m mark, representing a willingness by many acquirers to pay significant premiums for their targets. But judging appropriate valuations is tricky due to the role of government targets and regulations and the significant development pipeline that comes with many of the targets. The problem is that, as Rhys Stanwix, Head of Energy Strategy at SSE, puts it, renewables represent "an artificially created market driven by concerns about climate change and security of supply".

Competition for M&A deals is likely to increase.

A number of factors appear to be constraining growth in the industry, ranging from delays in obtaining planning permissions to develop sites, to a shortage of key materials, such as wind turbines, or specialized equipment, such as vessels to develop offshore wind farms. Until some of these constraints ease up, the rush to meet renewable energy targets may continue to boost valuations. In part, this is because M&A is the only way to quickly build

up a presence in the market, given the lengthy lag times in developing new sites, even though greenfield development can be more profitable. "The only way to enter this sector heavily is really to acquire other companies," says Estanislao Rey-Baltar, CFO of Iberdrola Renovables. Accordingly, 68 percent of executives polled see competition for M&A targets increasing over the next three years.

The pace of consolidation will accelerate, but not for all technologies.

Roughly 60 percent of executives surveyed expect to see further consolidation in wind, solar and biofuels - indeed, 30 percent expect to purchase such a company themselves between now and 2010. The figures are about half for hydro, and even less for tidal. This is purely a question of economics: wind especially, but solar and biofuels to a lesser degree, are becoming more financially viable and have pricing structures designed to support them as the technology improves. Eight out of ten respondents expect them to see moderate to substantial growth. Hydro has long been profitable, but has little growth potential, and tidal technology is still a long way from being commercially viable on a large scale, with dozens of competing technologies all vying for investment.

M&A activity varies according to the distinct interests of different buyers. One common factor, however, is that the big are swallowing up the small. Major energy companies and renewable energy specialists are the main investors in this sector, according to the survey, although other types of investor have become more prominent during recent times, particularly infrastructure and other specialised funds. Among energy firms, power companies are the most active in acquiring renewable energy players, especially wind farms. Executives in the oil & gas majors appear to be more drawn to biofuels, probably as a direct replacement for their current products. Renewables specialists, meanwhile, expect to turn increasingly to solar. Across the board, however, large firms are buying up smaller ones as, in Mr Rey-Baltar's words, "large-scale investments ... have allowed companies to take advantage of lower investment and O&M costs". Of the companies polled for this report, larger ones are far more active in M&A: those having annual revenue of over US\$10bn are acquiring others at more than twice the rate of smaller rivals. Even with a surge in valuations over the past few years, the majority of deals during 2006-07 were done at between US\$5m and US\$20m.

Consolidation appears to be primarily regional, although some global renewable energy businesses are also starting to appear. Two-thirds of survey respondents expect national and cross-border consolidation to increase in the coming years. However, cross-border activity to date is focused on regional purchases: nine in ten of those buying a renewables company in Canada were from North America, and five of the top six investment destinations for Europeans were EU countries, although the last 18 months has seen several major European utilities entering the US renewables market. Looking ahead, respondents see their respective region as the one having the greatest growth potential. How far global firms develop depends on how companies weigh the advantages of detailed local knowledge and geographic risk diversification. Global fuel firms are already common and infrastructure investors usually look for opportunities worldwide. For power generation, however, as Ian Learmonth, Executive Director heading the European Renewables Business of Macquarie, the Australian investment group, explains, "the economics are very different and more localised than people might think". Many companies are choosing to stay regional; some, especially financial investors, are looking worldwide.

Government is both a driver of growth and a barrier to it. Political initiatives to achieve major climate change targets, such as the Kyoto Protocol and Europe's planned 2020 carbon reduction goals, have served as key drivers for growth in the renewable energy sector. This presents something of a paradox in the renewable energy industry, as government also acts as a barrier to growth. Among the key factors driving up valuations is that the actual number of renewable energy sites constrained - permissions to build new wind farms or solar arrays are tough to secure. In the UK, for example, commentators believe that there are around 9 GW of wind energy tied up in the planning process, and there are recent examples of planning consent taking up to five years to be achieved; this process should normally take a matter of months.

The competing technologies

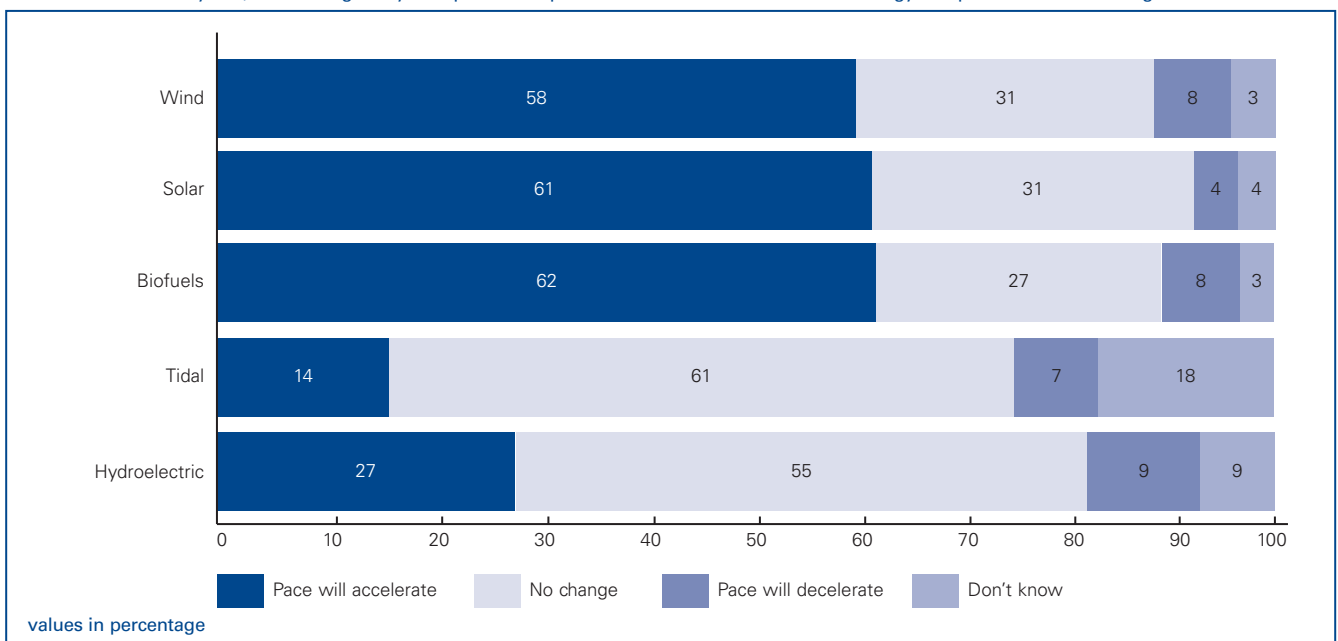
Consolidation within the sector is occurring rapidly. Over the last three years, 89 percent of traditional power generation companies polled for this report had purchased a renewable energy enterprise, with the vast majority acquiring more than one.

Still, executives expect M&A activity to accelerate. Nearly three-quarters (72 percent) of respondents believe that the size of deals will increase, while over two-thirds (68 percent) expect that competition for targets will grow - and 59 percent think that infrastructure funds and financial investors will bring more money into the sector. Rhys Stanwix, Head of Energy Strategy at Scottish and Southern Energy (SSE), a major UK-listed utility, thinks this consolidation "will likely continue for the foreseeable future." His company recently completed a €1.45bn (US\$2.2bn) acquisition of Ireland - based Airtricity, a renewable energy company. Suppliers, he explains, are required to deliver on increasing targets, but there are a large number of developers, many of which are often small. "That will drive you to do either a lot of contracting or, what has happened, consolidation where suppliers buy them up," he argues. "There are a lot of portfolio benefits and

economies of scale in owning the facility. I think it was almost inevitable that this would start." Ed Northam, CEO of Viridis Clean Energy Group, an infrastructure fund, also cannot see consolidation slowing over the next four to five years. "You are starting to see an explosion in interest," he says.

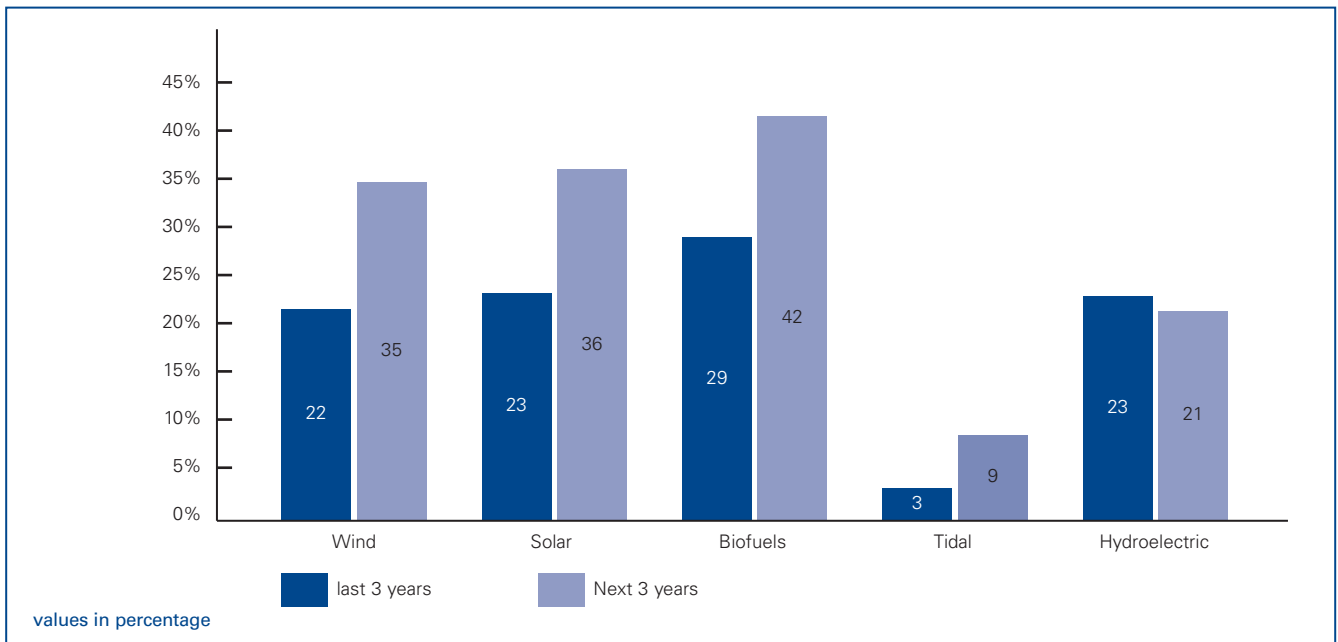
This interest, however, is concentrated in particular parts of the renewable energy market. Roughly 60 percent of those surveyed expect consolidation to accelerate in biofuels, solar and wind. Conversely, a minority expect the same for hydroelectric firms (27 percent) and tidal energy (14 percent), with the clear majority expecting no change. Growth predictions follow a similar pattern: over three-quarters foresee high or moderate growth from wind, solar and biofuels, but only 46 percent from hydro and just 27 percent from tidal.

Over the next three years, what change do you expect to the pace of consolidation of renewable energy companies in the following sectors?



Source: The Economist Intelligence Unit 2008

In the past three years, has your company acquired a business within any of the following sectors of the renewable energy industry? Does it plan to acquire a business in these sectors in the next three years?



Source: The Economist Intelligence Unit 2008

A notable shift away from hydroelectricity is currently taking place. So far, it has featured as heavily as other technologies in the search for renewable energy sources: over the past three years, for example, companies polled for this report were as likely to acquire hydro facilities as solar or wind. Going forward, however, hydro is being overlooked in favour of alternatives. Over the next three years, the number expecting to purchase a hydro firm will drop by about 9 percent, while those planning to buy a wind, solar or biofuel business will go up between 45 percent and 60 percent.

Rhys Stanwix describes the varying appeal of these power sources as purely a question of economics. "Wind and biomass are benchmark technologies: they're at market; they are economic."

Geoff Dutailis, COO of Babcock & Brown Wind Partners (BBW), a wind energy business operating globally, agrees: "Compared with solar, tidal, biofuels [and] biomass, generally speaking wind energy is streets ahead." Ian Learmonth, the Executive Director heading the European Renewables Business of Macquarie, also believes that wind "is a proven technology." Equally important, European support mechanisms and feed in tariffs are favourable to both wind and solar, even though the latter is markedly more expensive to produce.

On the other hand, hydroelectric power has long been a viable technology, with Niagara Falls providing power to Ontarians for nearly a century. Longevity is, however, part of the problem. In Britain, for example, SSE's Rhys

Stanwix sees future hydro as a more challenging investment prospect. The company, the country's largest hydro producer, has built only one significant new facility recently. This is because of the difficulty in finding sites with sufficient efficiency to make them viable prospects. "There are few great rivers sitting out there that people haven't already dammed up to the extent they will be able to," says Geoff Dutailis. Environmental concerns about damming and flooding, often associated with greenfield hydroelectricity projects, also lessen appeal. "Not only are there few opportunities left, I doubt whether they would get community approval for them," he says. "Mini-hydro has a role, but the big schemes have had their day, certainly in Western countries."

Who is buying and why?

Most executives polled for this report believe that big, international energy companies will be among the most active in seeking acquisitions (68 percent), followed by specialist renewable companies (56 percent). Major utility firms have led the way in the past 18 months with a number of deals over the US\$1bn mark. These have included the acquisition of Spanish Energi E2's assets by E.On (€ 722m, or about US\$1.1bn); the Trinergy acquisition by International Power (€ 1.8bn, or about US\$2.8bn); and the acquisition of Horizon Wind Energy in the US by EDP of Portugal (US\$2.15bn).

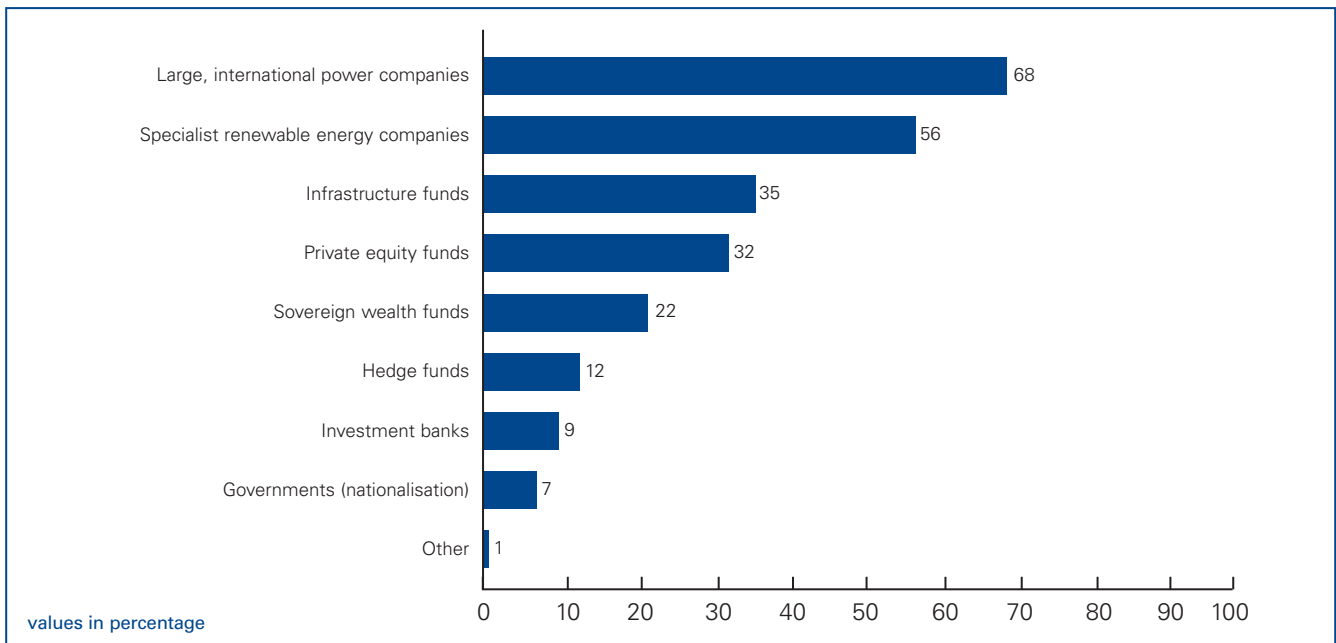
When considering M&A in the renewable energy industry, however, it is best to see it as several overlapping markets, rather than one large one. Depending on what they currently do, traditional energy companies are seeking different things from the renewable energy sector. For example, power generators are buying far more firms than extractive energy firms, encompassing gas, oil and coal extractors or refiners. Nearly nine in

ten (89 percent) power generators had acquired a renewable energy firm in the last three years and 78 percent are either in the process of completing an acquisition or actively seeking one. By comparison, 57 percent of oil & gas majors and extractive firms had completed an acquisition in the past three years, while 42 percent are currently completing a deal or seeking one—still significant, but not in same league.

M&A snapshot: a selection of major wind deals				
Target company	Stake	Acquirer	Purchase price, in acquiring currency (US\$ equivalent)	Completed
Airtricity	100%	Scottish & Southern Energy	€ 1.4bn (US\$ 2.2bn)	2008
Trinergy	100%	International Power	€ 1.8bn (US\$ 2.8bn)	2007
Horizon Wind Energy	100%	Energias de Portugal (EDP)	US\$ 2.15bn	2007
REpower	75%	Suzlon	US\$ 1.6bn	2007
Airtricity (US assets)	100%	E.On	US\$ 1.4bn	2007
Energi E2 Renovables Ibericas	100%	E.On	€ 722m (US\$ 1.1bn)	2007

Source: The Economist Intelligence Unit 2008

Over the next three years, which of the following categories of acquirer do you think are likely to be most active in seeking targets for acquisition?
(Respondents selected up to three categories)



Source: The Economist Intelligence Unit 2008

Power generating firms

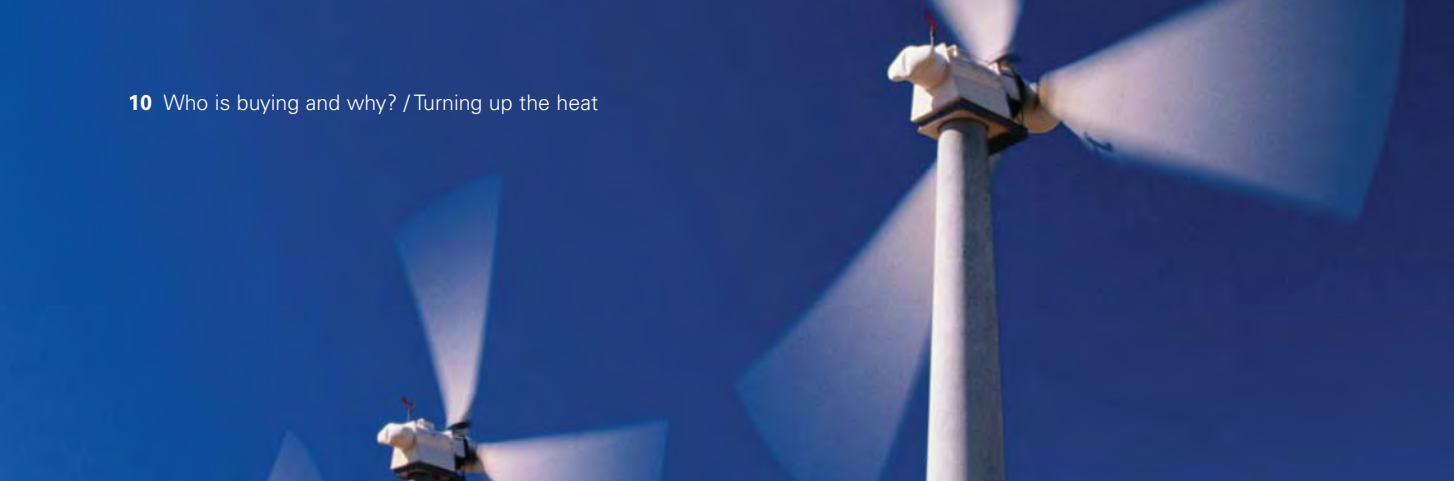
Power generators are looking at their end product: electricity. Accordingly, they are buying a lot of wind companies. About 39 percent of those polled have done so in the last three years and 54 percent expect to do so in the next three. SSE, for example, recently announced its target to grow its renewable energy capacity in the UK and Ireland to 4,000 MW by 2013, by investing £2.5bn. Hydroelectric targets are even more popular: two-thirds of power generators have acquired one in the past three years, although only one-half expect to between now and 2011. This suggests that hydro is a useful technology, but with limited growth potential. In the immediate future, wind is more interesting. With these purchases, power generators are focused on

growth: increased market share is a top priority (selected by 68 percent), as is the penetration of new markets (54 percent). Far behind are energy security (7 percent) and technology acquisition (4 percent). Ultimately, however, regulatory targets are behind much of this activity. With governments, especially in the EU where M&A activity is particularly strong, mandating significant renewable sourcing for energy, power companies have no choice but to look for such options.

Oil & gas majors and extractive firms

Respondents from oil & gas majors, including coal and other extractive firms, have a markedly different outlook. They are much more interested in biofuels than other renewable energies. Thirty-seven

percent have bought such a company in the last three years, twice the number that bought solar, and three times that of wind. Their focuses are greater market share (selected by 50 percent), but these firms are also interested in diversifying asset types (50 percent) and acquiring better technology (47 percent). In a world with increasing demand for oil, they are also more interested in energy security (24 percent), compared with power generators. Essentially commodity traders, these companies are primarily looking for cleaner fuels with fewer geopolitical complications to substitute for current offerings. As SSE's Rhys Stanwix notes, biogas and biomass are still small players in electricity generation: biofuels in many parts of the world are about "finding a replacement for fossil fuel-based



petrol". Of course, some of the oil & gas majors - most notably BP and Shell, have been active in the wind and solar industry. BP recently valued its alternative energy assets, which encompasses solar, wind, hydrogen and biomass, at between US\$5bn and US\$7bn, but says the unit does not deliver a profit as yet. There have even been rumours of a sell-off or flotation.

Renewable energy firms

Renewable energy providers have yet a different profile. They are much smaller on average: two-thirds of the renewable energy firms polled for this survey have annual revenue of less than US\$500m. Historically, many have considered their mission at least as much environmental as economic. Over the past few years, their interest has covered solar, wind and biofuels. In future, however, far more expect to buy into solar (48 percent), than wind (32 percent) or biofuels (36 percent). This is partly owing to increased competition from larger energy players in wind and biofuels, as well as the greater need for innovation to make solar viable, which is more attractive to specialist outfits. Indeed, the current attraction to solar involves something of an almost romantic desire to tap into the world's ultimate energy source, believes Viridis's Ed Northam. As with traditional power generators, renewable energy companies are engaging in M&A to boost market

share (56 percent cited this among their top three responses) and geographic growth (40 percent). Given their size and mission, they are also pursuing better economies of scale (40 percent) and new technologies (32 percent).

Financial investors/infrastructure firms

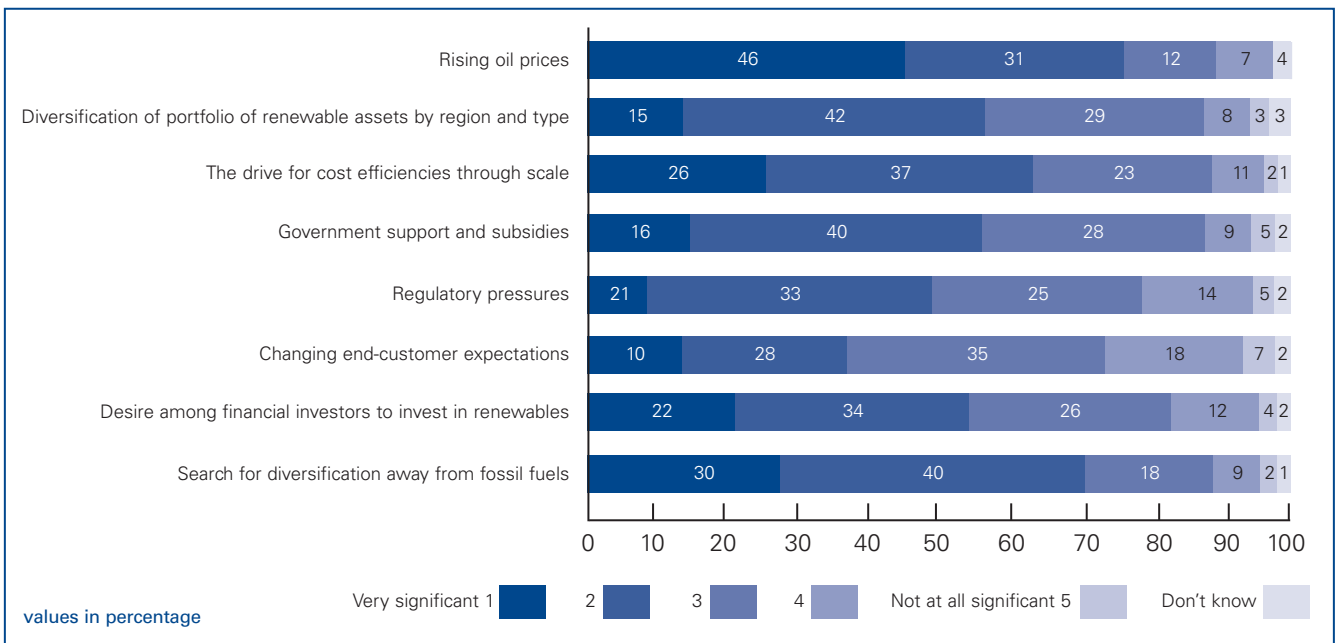
Infrastructure funds, private equity firms and other financial investors are likely to be the most active M&A participants after power generating companies, according to the survey. Financial investors look set to add liquidity, and potentially higher valuations to all sectors of the renewables market: 39 percent of those who took part in the survey expect to purchase a wind business in the next three years, and one-half intend to do the same for solar and biofuels. Different kinds of investors, however, will focus on different technologies. Private equity firms, and especially venture capital players, are more interested in biofuels and solar, which remain more speculative investments. Infrastructure funds, on the other hand, are turning to wind assets, given its stable long-term cash flow. BBW's Geoff Dutailis explains that wind is being perceived as a mainstream technology. "It has demonstrated that it can generate energy within a regulated voltage range and can ride through network

disturbances. It has the credentials to sit on a network and draw investment dollars," he says. Ed Northam adds that wind is attractive because it is one of more easily understood and commoditized technologies. "It is getting attention from financial investors because they think they understand the fundamentals," he says.

Regardless of the technology being acquired, the underlying drivers for consolidation are remarkably similar across all respondents:

- **Problems with fossil fuels:** 77 percent consider rising oil prices to be a significant driver of consolidation, and 70 percent agree there is a desire to diversify away from fossil fuels. As the cost of these fuels has risen, technological advances have brought down the cost of generation from renewable sources, especially wind;
- **General business strategy:** Cost efficiencies (63 percent) and portfolio diversification (57 percent) play a large role;
- **Government carrots and sticks:** Subsidies (56 percent) and regulatory pressures (54 percent) are also prominent factors.

How significant do you think the following factors are as drivers of consolidation within the renewable energy sector?



Source: The Economist Intelligence Unit 2008

Although figures vary between different types of buyers, the overall pattern holds. Attitudes only diverge significantly over customer demands. For renewable specialists, for whom being green is the core appeal of their sales proposition, 54 percent say that changing customer

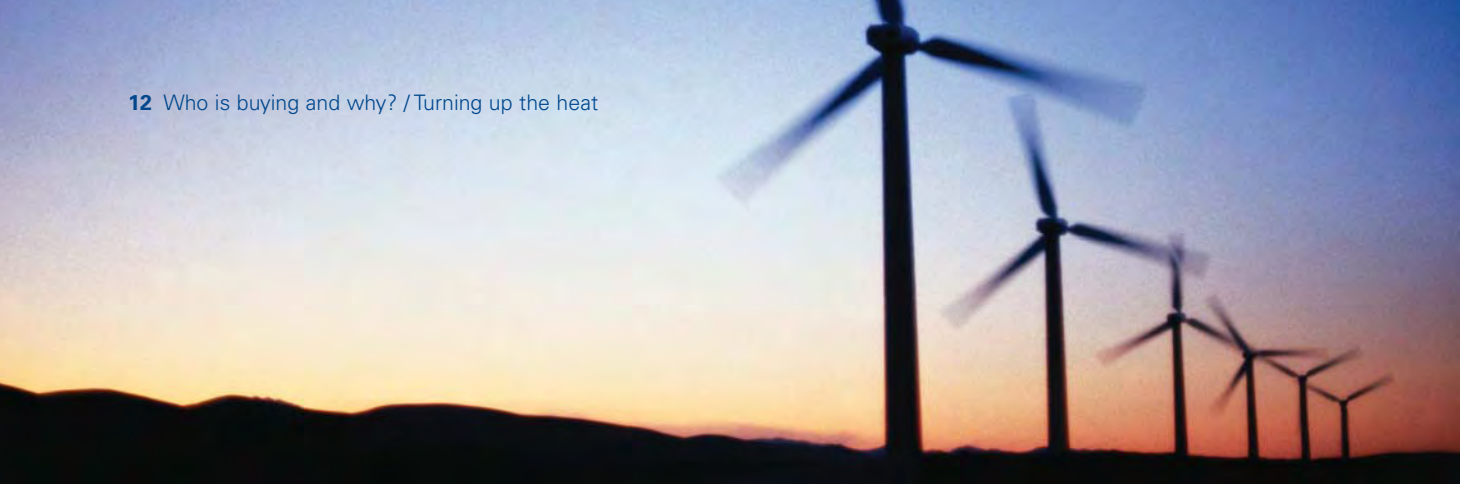
expectations are a significant factor in consolidation. Oil & gas majors (33 percent) and power companies (21 percent) are less convinced.

Although all of these drivers are important, general business strategy

(in particular the need for cost efficiencies) explains the shape of the current consolidation. Although smaller companies are also making purchases, activity in this sector is usually a matter of big companies snapping up small ones (see table below).

Big appetites			
Renewables deals by size of acquirer (all revenue in US\$)			
	Annual revenue more than \$10bn	Annual revenue \$1bn - \$10bn	Annual revenue less than \$1bn
Average acquisitions last three years	4.13	2.03	1.91
Companies making at least one acquisition	85%	74%	64%
Companies now involved in or actively seeking acquisitions	69%	58%	47%

Source: The Economist Intelligence Unit 2008



Estanislao Rey-Baltar, CFO of Iberdrola Renovables, a separately listed unit of the Spanish Iberdrola power group, says large-scale investments in renewables have allowed companies to “take advantage of lower investment and operating and maintenance costs.”

Historically speaking, Viridis’s Ed Northam believes, “you have a very fragmented and vertically integrated industry that started with tree-huggers and attracted smaller players.” He argues that developers are driving the industry forward, but development is still fragmented and at a small scale. However, as the industry’s potential

becomes more apparent, larger players will enter and acquire the smaller, less well-capitalized organizations for their development potential. This echoes other industry consolidations, says Ed Northam: “you have an immature industry and the first step to maturity starts with consolidation.” In his view, previous attempts by large companies to move into renewables failed because “they decided it was too Mickey Mouse and small scale, and because communities were not behind it.” It is only now that industry potential is being recognized. BBW’s Geoff Dutailis also sees the sector maturing, especially within wind. “Electricity is one of the

most dynamic, aggressive and competitive commodities in the world. Ultimately renewables are part of that commodity market and consolidation is acceptance of another form of technology operating in it. That is the main driver of consolidation.” Now that regulators, governments and even consumers are facing up to the challenges of climate change, the structure of the renewables sector is changing from that of a cottage industry.

Regionalization or globalization?

The ultimate shape that the mature industry will take is another matter. The energy sector has always had a mix of products and business models. Leading oil companies have typically been global in reach; while national, or even local, utilities have traditionally provided much of the world's electricity. The current spate of consolidation raises the question of what type of energy company might dominate a low-carbon world.

The majority of respondents to the survey expect increased levels of national (67 percent) and cross-border (65 percent) consolidation. The latter, however, is likely to involve predominantly regional rather than global integration, although in recent times there have been a number of examples of transatlantic activity among European firms. Most respondents made purchases close to home: nine out of ten of those who bought in Canada, for example, were based in North America; and five of the top six

destinations for European investors were EU countries. In fact, the emphasis on cross-border integration was particularly strong in Europe, with 75 percent of respondents there expecting an increased level, compared with just 61 percent elsewhere, probably because of interest in integration within a unified market. More tellingly, respondents in each major region saw their own area as the one offering the best growth prospects for renewables and likely to see the most consolidation (see table below).

Where to buy? Regional prospects for renewables				
	Best prospects for renewables		Likely to see most consolidation	
	Home region	Next highest	Home region	Next highest
North America	61%	19% Asia-Pacific	59%	17% Western Europe
Europe	55%	17% North America	70%	17% North America
Asia-Pacific	64%	17% North America	53%	19% Western Europe

Source: The Economist Intelligence Unit 2008

Does interest in renewables go beyond a regional focus? For power companies and distributors the issue is whether risk is better managed through superior knowledge or diversification. Rhys Stanwix says that SSE made a conscious decision to stay in Europe and not buy American assets. "Closer to home we have a better understanding of the market, political and regulatory environments," he notes. In his view, this explains much of the preference for

regional investment. Macquarie's Ian Learmonth agrees, but differentiates between large financial investors and utilities: "The economics are very different and more localized than people might think. Because local rules and conditions are so relevant, developers tend to be more localized than major sources of capital." The latter, especially infrastructure funds, are more likely to go further afield.

Not only do regulatory regimes differ with geography, the survey also points to differences in expectations regarding technology. More North Americans, for example, thought that consolidation would accelerate among biofuel companies than any other renewable energy sector, while Europeans put solar and wind far ahead, perhaps because of differing political emphasis.

Of course, not everyone agrees, in particular infrastructure funds. Although Ed Northam acknowledges a lack of local understanding as a big barrier, he says

the simple reason for Viridis's global expansion is its need to diversify its asset portfolio. "If we looked only at Australian renewable energy assets, we wouldn't have many to look at. We look globally for diversification and out of necessity." Geoff Dutailis adds that as a wind specialist, BBW decided that "doing wind energy well entailed having diversification strategy across a number of fronts". These include geography, regulatory environments, revenue streams and suppliers. "Diversification flows out of being a sector specialist, and if you are going to diversify you have

to be in a number of regions and global in your search for new markets," he says. As one of the minority of power companies going global, Estanislao Rey-Baltar says that Iberdrola Renovables, a European producer that has acquired in the US, takes a global approach for the same reason. "Having assets geographically diversified lets you be less dependent on the regulation of one country, wind availability in that country, price differences, or transmission issues. The risks are real risks for the sector, and this is the only way to mitigate them."



Heading towards a bubble?

The prices currently being paid for renewable energy companies are rising rapidly. Take Suzlon Energy's acquisition of REpower in 2007. Vivek Kher, Head of Communications, estimates that the price his company paid for REpower was roughly four times its value a few years earlier. The final sale price was about four times REpower's annual revenue, according to the Financial Times of London. Although precise multiples are rarely reported, executives interviewed for this report unanimously spoke of high valuations in current deals being conducted in the market. The Franco-Belgian Suez Group's acquisition of Compagnie du Vent, for example, valued the French wind generator at more than 50 times its annual revenue. Some firms, such as BBW, are actively seeking to take advantage of current prices. The company recently announced plans to potentially sell off a selection of its European wind assets (see case study: Babcock & Brown Wind Partners).

Calculating the average enterprise value (EV) per operating MW of recently completed deals, based on available data (see table below), suggests an average of US\$4.2m per MW of operating capacity as an approximate measure. By comparison, several greenfield developments have been built for approximately half that amount per MW, according to publicly available costs. Given that EV is a measure of a company's value typically used to gauge a theoretical takeover price, this data suggests that buyers have been willing to pay a significant premium for renewable energy targets. However, true valuations are difficult to determine, given variances in the amount of pipeline capacity.

M&A deal metrics						
Target	Aquirer	Announced Enterprise value (US\$m)	% purchased	MW in operation	EV per operating MW	Completed
Airtricity	Scottish & Southern	2,200	100,0%	400	5.5	2008
Trinergy	International Power	2,800	100,0%	581	4.8	2007
Horizon Wind Energy	EDP	2,150	100,0%	1,324	1.6	2007
Airtricity (US assets)	E.On	1,400	100,0%	210	6.7	2007
Energi E2	E.On	1,100	100,0%	260	4.2	2007
Compagnie du Vent	Suez/Gas de France	950	50.1%	148	6.4	2007
Average					4.9	

Source: Company announcements (where relevant these have been converted to US\$ using foreign exchange rates per the FT on 7 May 2008)

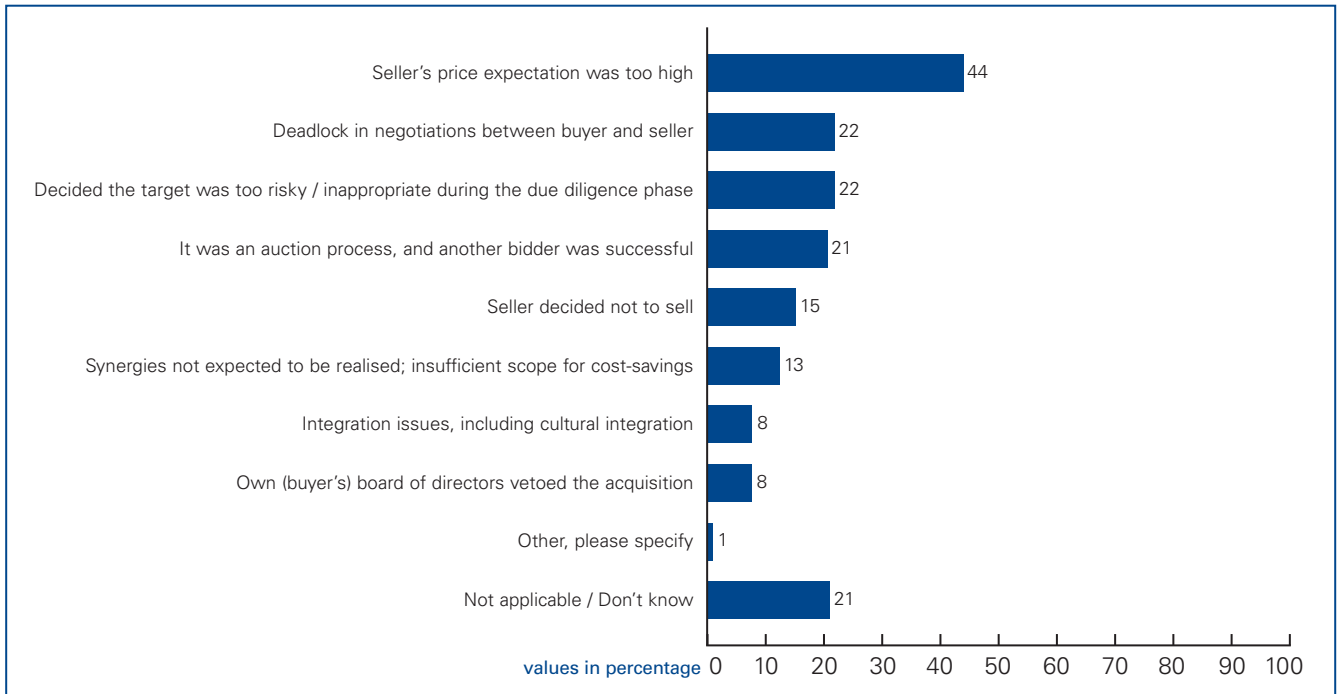
“Any industry that has growth potential attracts investors like bees to pollen,” says Ed Northam. The multiples and valuations of renewables companies are now causing widespread concern, particularly in Europe. One-half of respondents to this survey (and nearly two-thirds in Europe) agree that there is real risk of a bubble - although about one in five still disagree. Such worries may well be justified. High valuations

are already having an impact on the level of activity. With 52 percent of respondents believing that high valuations are a factor restricting the growth of the renewable energy sector. Only regulatory constraints and uncertainty score higher (57 percent).

For companies that had considered but not completed acquisitions in the last three years, 44 percent listed high

seller expectations as a contributing cause, nearly double the number giving any other reason, with 21 percent simply being outbid at auction.

If your company has considered specific targets for acquisitions in the last three years but did not complete the takeover, what deterred you?



Source: The Economist Intelligence Unit 2008



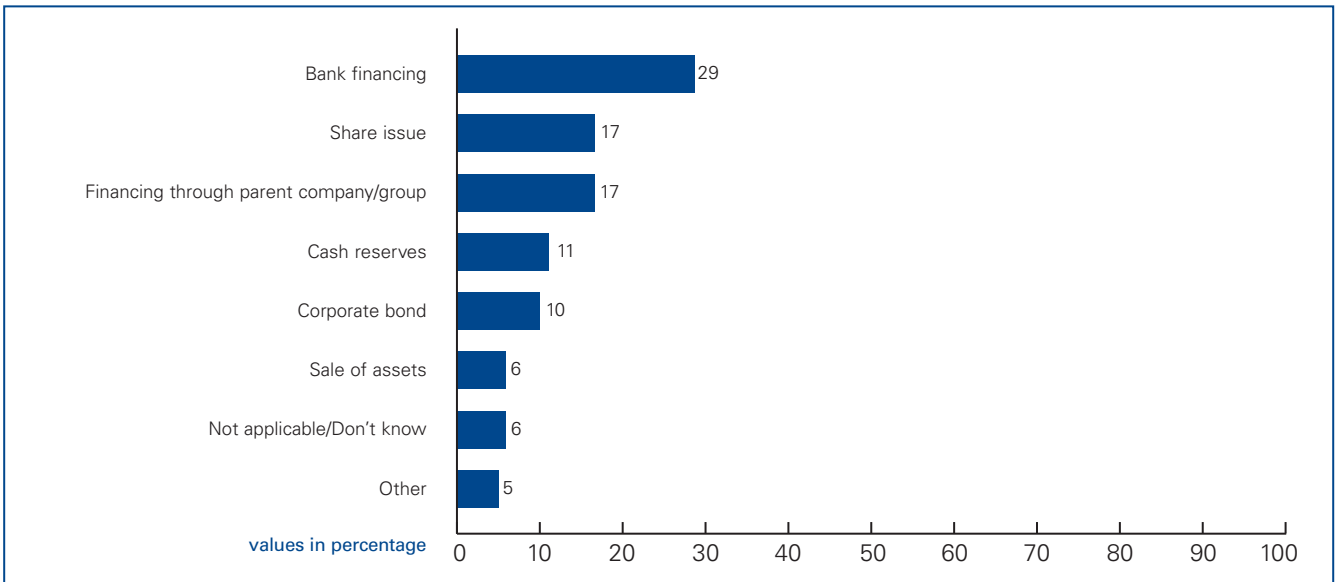
Between January and mid-March 2008, the WilderHill New Energy Global Innovation Index (NEX), which tracks the world's 50 largest clean or low-carbon energy producers, dropped by some 25 percent, but this came on the back of a 58 percent rise during 2007. By comparison, another technology-rich index, the Nasdaq, which fell by 16 percent over the same period at the start of this year, rose by just 10 percent over 2007. Macquarie's Ian Learmonth points out that, despite what is happening to share prices, "unrealistic

expectations" remain about price in some parts of the market, in particular for projects and pipelines. Still, 56 percent of respondents believe that valuations will increase (compared with just 10 percent expecting the opposite), and seven in ten predict that the size and ambition of deals will grow in the next three years.

Of those companies looking to buy, 39 percent expect to do so by increasing their debt, 29 percent by direct financing and 10 percent by

corporate bonds. And of those for whom it was relevant, over one-half expected to use gearings of more than 50 percent in making new acquisitions. Compared with other industries, such levels of gearing are not necessarily alarming, but many large utility players are cash-rich, following several years of high power prices, thus allowing them to snap up smaller companies without assuming much debt.

Which of the following will your company rely on most heavily to fund acquisitions over the next three years?



Source: The Economist Intelligence Unit 2008

Another sign of a bubble is small investors piling in where bigger, seasoned ones are more cautious. Two-thirds (66 percent) of the largest companies (those with annual revenue over US\$10bn) agree that a bubble is a possibility. Far fewer (44 percent) smaller companies (with revenue under US\$500m) are concerned. Although the bigger firms are doing more buying, smaller ones are much more likely to incur new debt (45 percent compared with 24 percent). Smaller companies also take on higher gearings, with about one-half (48 percent) accepting figures of over 50%. Just one-third (32 percent) of larger companies do the same. Viridis's Ed Northam says that some "highly leveraged groups have come into the sector in the last 18 months and paid high prices that ultimately may be substantiated, but I'm not sure that the structure and focus of some of these players is long term".

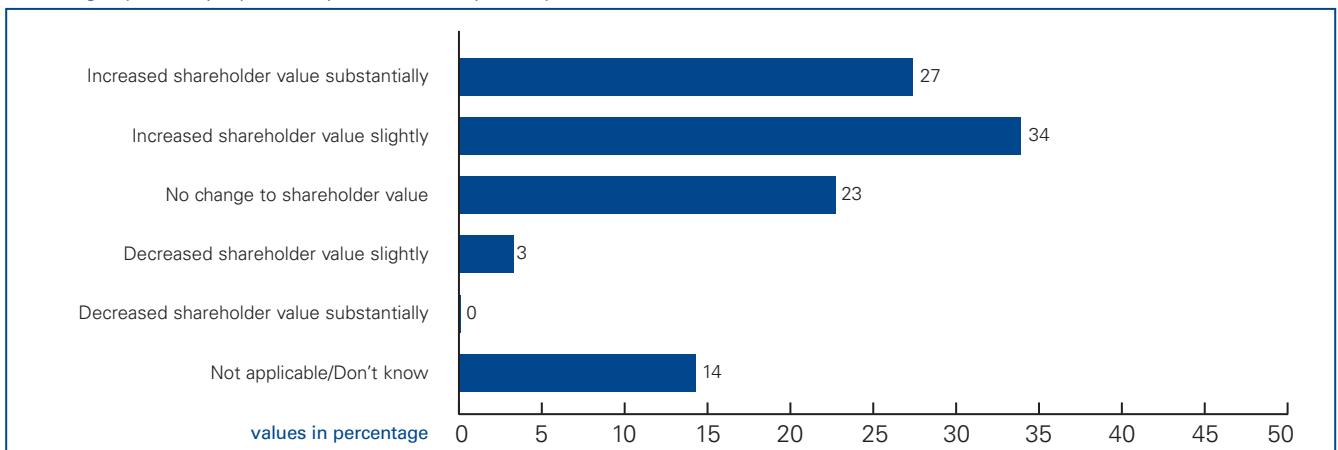
The adoption of new technologies is frequently accompanied by a rapid

upsurge in the valuations of the companies involved, a large correction, and then more restrained growth as businesses build real value. The most prominent recent example was the dotcom boom and bust, but American railroads in the 1880s exhibited the same pattern. Ed Northam sees a similar trajectory as likely. "I don't think it will be as extreme as with dotcoms, but we haven't seen the end of the frenzy stage yet." Current valuations will eventually seem conservative, he thinks, but not as quickly as some seem to believe. "Those with a long-term focus will be proven correct, but people who will have used aggressive assumptions in the medium term will end up under pressure."

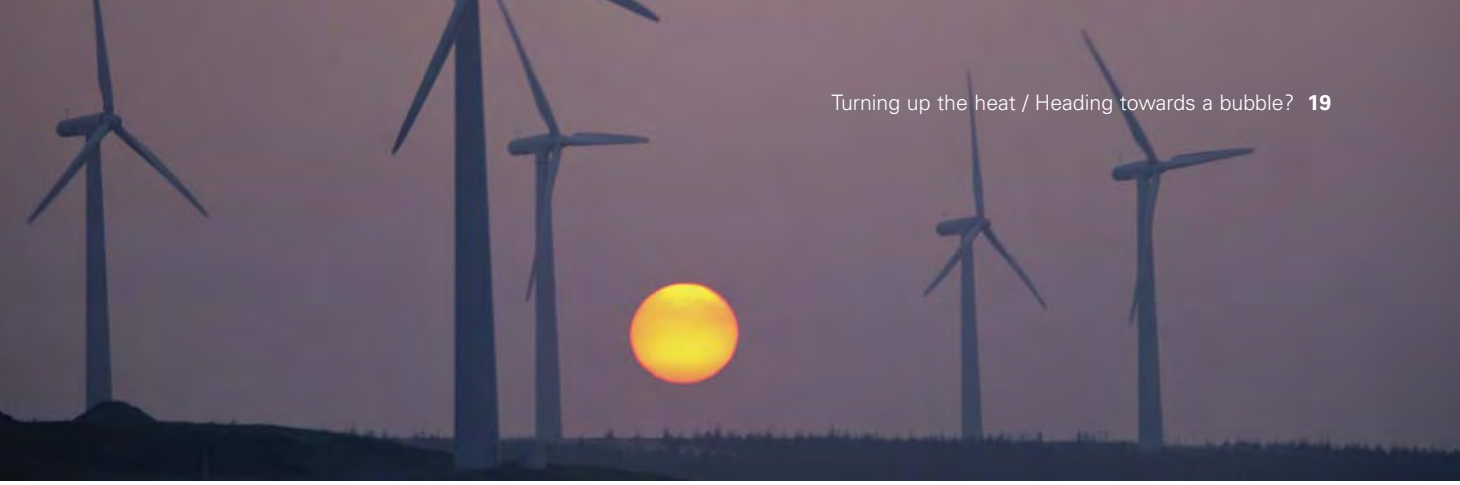
The dotcom parallel, however, is not exact. Iberdrola Renovables had about 8,000 MW of generating capacity at the end of 2007. "This is a heavy and real asset base," says Estanislao Rey-Baltar. Unlike many dotcom - era Internet firms, which were based on unproven

ideas, the renewable energy sector makes something measurable. Moreover, Vivek Kher, Head of Communications at Suzlon Energy, an India - headquartered wind solutions company, argues that it is not price per se that matters. "If a company will add value, it will be acquired," he says. In the survey, 61 percent of executives agree that their company's last acquisition has added value, compared with just 3 percent who believe it had decreased shareholder value. Respondents may be seeing the world through very rose - coloured glasses: in detailed studies of the impact of M&A across a variety of sectors, the proportion of deals failing to add value often outnumbers those that do, despite executives' perceptions that shareholder value has increased. The big question is how much is being paid for the jam tomorrow in the form of a long trail of development projects.

Thinking of your company's last acquisition, what impact do you think it has had on shareholder value?



Source: The Economist Intelligence Unit 2008



Case study: Babcock & Brown Wind Partners

The high multiples and prices that renewables companies are attracting have raised concerns in some quarters about a bubble. Geoff Dutailis, COO of Babcock & Brown Wind Partners (BBW), is among those who see the current valuations as, broadly speaking, justified. He cites the major, worldwide drivers of growth in the market: government renewable energy targets to address climate change, energy security concerns, wind technology becoming ever more economically efficient, and the increasing price of fossil fuels. Although some companies may have “toppy” valuations, he says, usually because of overly optimistic claims about the development pipeline, “you can’t draw parallels with the tech boom primarily because this is a sector selling a real product and drawing real revenue. If you start to factor energy and carbon costs into the future, the valuations start to look very sensible.”

This confidence in the inherent value of the sector does not mean that current prices are not affecting BBW's strategy. “We want to capitalise on it,” notes Dutailis, because “we think BBW is undervalued given current security prices”. He explains that the company’s current portfolio of 2,500 MW cost about US\$2.3m per MW to develop or acquire. Its current market price suggests a value of just US\$2m per MW. On the other hand, recent initial public offering (IPO) and purchase activity in Europe have seen valuations running at roughly double these levels. “We want to capture that valuation gap,” he says. The company has accordingly launched a “Strategic Initiative” to identify and sell appropriate high-value assets, particularly in Europe.

This is not a question of simply cashing in investments at a good time. BBW is looking for capital to fund new projects and acquisitions. However, “it makes no sense if we sell a bunch of assets in Spain, and make a great return” only to have to buy similar ones at the same price. He notes that BBW has a number of framework agreements allowing it to develop its pipeline at lower than the market price, and could also take money out of its sales in Europe in order to put it into new markets, such as Australia, New Zealand and Canada. “If and when the heat comes off in Europe, potentially we would move back in,” he notes. Moreover, by making clear the value in its assets, the Strategic Initiative is designed to increase BBW's own share price, making access to capital easier.

The role of government

One of the difficulties in assessing valuations, however, is that so much is dependent on state support. Although respondents listed government subsidies and regulation behind other factors driving the consolidation of renewables, it is important to remember that renewables "are an artificially created market driven by concerns about climate change and security of supply," as Rhys Stanwix puts it. Renewables are totally dependent on subsidies, he says. "You couldn't build wind without subsidy, not in the UK. That is unlikely to change soon." Others agree that subsidies are essential for most forms of renewable energy. "Without government support many, if not all, would be uneconomical," says Macquarie's Ian Learmonth.

Of course, some technologies are much closer to being economically viable than others. Estanislao Rey-Baltar distinguishes on the basis of technology. Onshore wind could be economical within a few years, he predicts, but if a country wants other technologies, "subsidies will have to last for many, many years." Unsurprisingly, the level of government subsidy and support is seen as a major factor in determining where M&A opportunities are pursued for nearly one-half of all respondents (47 percent). Just 15 percent say it is not.

Accordingly, the value of renewable energy companies depends on expectations about the price that governments will ensure is paid for their output, either through special tariffs, direct subsidies or regulatory restrictions on the use of non-renewable energy. In this respect, the future looks bright. The EU has mandated that 20 percent of its energy must come from renewables by 2020, setting binding targets on member states. However, not all sectors have been given renewable energy targets—heating and cooling, for example, which accounts for 40 percent of energy consumption in the EU, is currently excluded. In practice, says BBW's Geoff Dutailis, this means electricity generation is likely to have a much higher renewables target to achieve. Even China, soon to be the world's biggest emitter of CO₂, has a goal of sourcing 15 percent of

its total energy from such sources by 2020.

As Ed Northam points out, a primary driver of regulatory interest is a fundamental community concern about global warming and the potential for climate change. "This is not going to go away, it is only going to increase," he says. All interviewees agree on this point. In Estanislao Rey-Baltar's view, companies are operating in an environment where concern about security of energy supply and CO₂ emissions is defining long-term government goals. "I think that this is a real growth story," he says. Global environmental security is pushing in the same direction as national security for many developed countries. The implications of dependence on a resource frequently found in unstable regions, or on countries whose relations with the West are worsening, has not gone unnoticed in Washington or European capitals. Meanwhile, countries like China, India or even South Africa are seeking fuel for their rapid development anywhere they can get it, and renewables are no exception. As Suzlon's Vivek Kher notes, it is expectations about government policy that are reflected in the valuation of companies.

The devil is, as always, in the detail. Even using market mechanisms to price negative carbon externalities is not straightforward, as the EU has found with its Emission Trading

Scheme. On renewables specifically, Estanislao Rey-Baltar says that many countries have strong market growth potential but a regulatory framework that is neither stable nor supportive, including some of the biggest developing world markets. "This is a handicap," he says. As noted above, 54 percent of executives polled consider regulation a significant driver of consolidation, but 57 percent also consider regulatory constraints and uncertainty a hindrance, making regulation an interesting paradox.

If governments are creating a market, how they go about it will have a profound impact on the value of the companies involved. Macquarie's Ian Learmonth, for example, believes that current high valuations are "a reflection of people's desire to be in a leading position as governments are setting higher emission reduction targets". Nevertheless, these higher-value companies would still need subsidies to make the profits to justify the valuations.

Another reason for the rapid increase in valuations is the mismatch between current, government-defined, output demand and current, frequently government-regulated, input supply. In Britain, for example, the government is pushing for higher renewable energy output, but has maintained relatively stringent planning controls on the creation of new wind power sites, creating high economic rents for the current owners. In Northern

Ireland, for example, planning permission can take up to three years to obtain, and in much of the rest of the UK over a year. "Probably the main catalyst of a correction will be whether the government eases up the access to these sites," says Rhys Stanwix. "If planning consents are awarded in greater numbers, prices will come down." The problem is not exclusive to the UK: 41 percent of respondents agree that lack of land sites and public opposition will hamper the wind power industry. Governments may be tempted to push the turbines out to sea, but that is more expensive.

Build or buy?

Even if the supply of available sites expands, there will be a lag before this translates into more power and executives estimate that it takes four to five years for a generation project to reach maturity. The time involved is not merely that needed to prepare and build a site. It can take years simply to secure the turbines themselves because of current high levels of global demand, a major reason behind Suzlon's strategy of vertical integration in its acquisition of Hansen Transmissions (see case study: Suzlon Energy). On top of this, there are problems inherent in deploying any relatively new technology, such as the limited number of specialised vessels capable of deploying offshore wind farms. Those interviewed agree that the most desirable economic course is for

companies to increase their capacity organically, because this approach extracts maximum value from projects. Nevertheless, those surveyed expect to see revenue growth coming nearly equally from M&A and organic investment. The lengthy development time required means that M&A is the fastest way to expand rapidly. "The only way to enter this sector heavily is really to acquire other companies," says Iberdrola's Estanislao Rey-Baltar. Accordingly, 68 percent of survey respondents think that competition for M&A targets will increase in the next three years, compared with just 5 percent who expect a decrease.

As a result, valuations are rising rapidly, and investors are behaving in some ways as they do during a bubble. What is different, however, is that the industry's current form is in many ways reliant on the state, and where supply, demand and potential growth depends as much on government policy as technological innovation or traditional market structures. In a world focused on climate change, these might explain current valuations better than irrational exuberance.



Case study: Suzlon Energy

Reviewing M&A activity at a macro level can obscure how individual investment decisions are made. Deals take place one at a time, each sitting within a company's broader corporate strategy. Suzlon Energy, an India-headquartered wind solutions company, is a case in point. It has been an active acquirer, purchasing Hansen Technologies of Belgium, a maker of turbine gearboxes, and REpower of Germany, a wind turbine producer, over the last two years.

Instead of expanding market share or geographic scope, the acquisition of Hansen was all about supply chain security. Vivek Kher, Suzlon's Head of Communications, explains that the wind energy sector is growing in a peculiarly restricted environment. "Enormous market opportunities exist, but the supply chain is not keeping pace. Companies have been forced to merge to have flexibility there," he says. Suzlon made a strategic decision early on to vertically integrate all elements of wind power production: in addition to running wind farms, it is the world's fifth-largest supplier of turbines. By 2006, however, the company made every element of the turbine barring the gearbox. Buying Hansen allowed it to make a more integrated design. The company's location was not of great importance. Suzlon had already established an R&D subsidiary in Germany in the 1990s because it thought this provided the highest value output for the investment—the same reason it chose to manufacture in India.

Its acquisition of REpower, on the other hand, was primarily about geography. Suzlon had long looked abroad for growth because, with over 50 percent of India's market share, foreign activity has been the only way for it to diversify. Forays into other countries, such as America, China and Australia, usually involved the creation of a local subsidiary. Europe, however, is the world's biggest wind market. "One of the considerations when we went in for REpower was accelerated access to [this market]," explains Vivek Kher. A further need was to bolster the company's limited offshore wind technology, which will play a growing role in Europe. REpower filled this gap.

Having plugged a technology gap and entered the European market, Suzlon is now set to focus on organic growth. "There is little need for us to look further," says Vivek Kher. "There is nothing that is going to add value. We will now grow entirely organically." The underlying market drivers of consolidation may not have changed, but these affect an individual firm's decisions only insofar as they change its specific strategy. Regardless of the aggregate picture of consolidation in the industry, businesses still need to make M&A decisions that fit their particular strategy.

Other KPMG Thought Leadership

Original thinking by KPMG firms can help lead the way in addressing areas of concern and can provide insight into some of the key questions that businesses involved in the renewables sector may be asking.

To receive electronic copies or additional information about any of the documents below please e-mail renewables@kpmg.co.uk or contact your local KPMG office. Alternatively, please visit the following web sites:

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KPMG's M&A Energy & Utilities team at KPMG is a leading global network of transaction professionals that regularly advises on some of the largest deals in the sector. The team provides advice on acquisitions, disposals and deal financing.

**KPMG's M&A
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