



cutting through complexity

Green power 2012:

The KPMG renewable
energy M&A report

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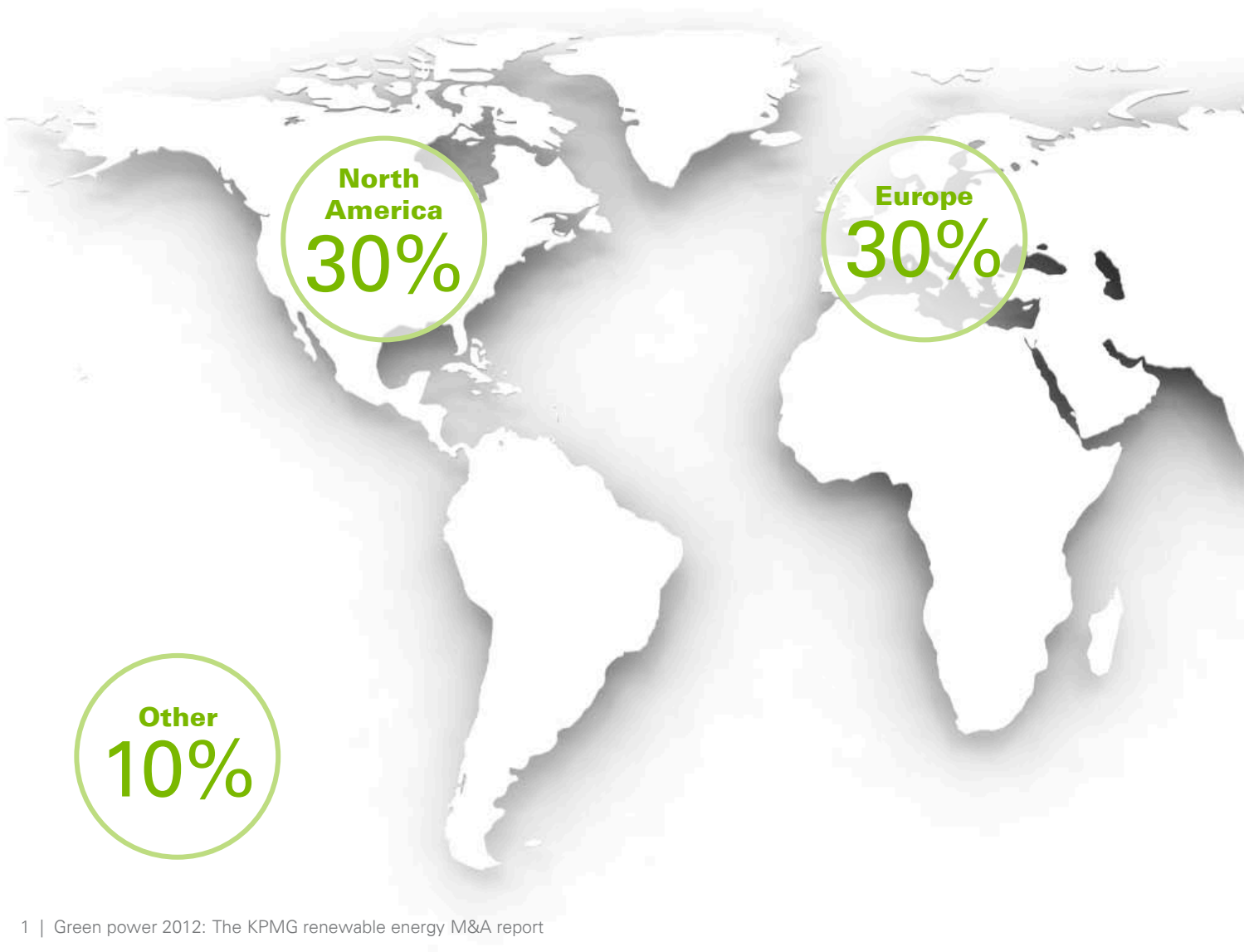


About the research

This report provides insight into global mergers and acquisitions (M&A) activity in the renewable energy sector. The findings are based on a survey of 500 senior executives in the renewable energy industry worldwide. The report was written in collaboration with Clean Energy Pipeline, a specialist renewable energy research, data and financial news provider. Transaction data and statistics included in this report have been extracted directly from Clean Energy Pipeline's databases. Clean Energy Pipeline is a division of VB/Research.

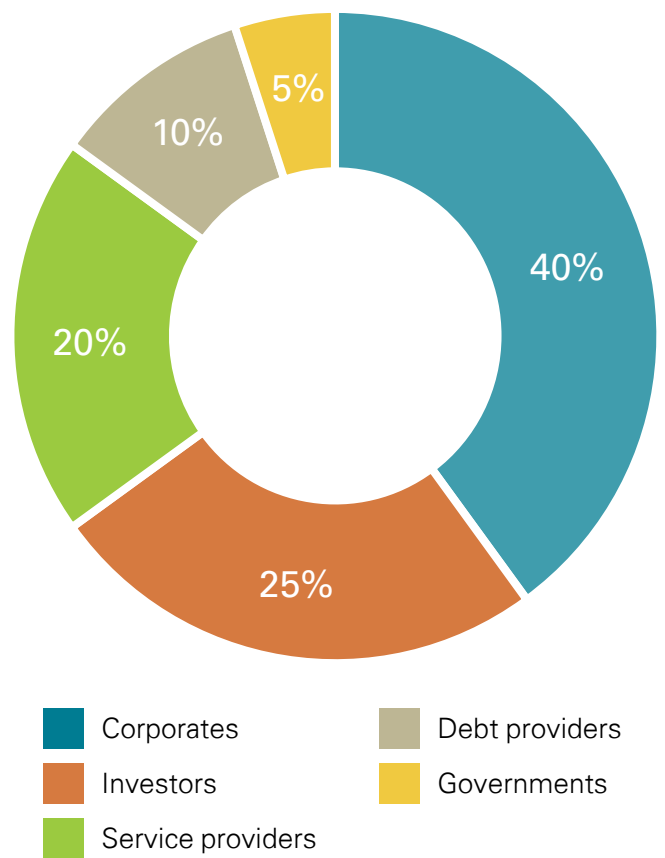
This report was completed between February and April 2012 and covers views from across the renewables industry, including corporates, financial investors, debt providers, governments and service providers. Survey respondents were spread across Europe (30%), North America (30%) and Asia-Pacific (30%), with the Middle East, Africa and South America accounting for the remainder.

Regional breakdown





Sector breakdown



To supplement the survey results, interviews were conducted with the following executives:

Liam O’Keeffe

Managing Director and Head of Project Finance, Global Loan Syndications Group, at Crédit Agricole, a global bank providing a variety of financial services to the renewable energy industry.

Tristan Grimbert

CEO of enXco/EDF EN North America, a developer, owner and operator of wind, solar and biogas energy projects across North America. enXco a subsidiary of EDF Energies Nouvelles, the renewable energy subsidiary of EDF.

Arturo Herrero

CMO at JinkoSolar Holding Co Ltd, a China-based vertically integrated manufacturer of ingots, wafers, cells and PV modules for the global market.

Hiroshi Sakuma

Senior VP of Mitsubishi Corporation, an industrial corporation operating across a variety of sectors including energy, metals, machinery, chemicals and foods.

Mike Garland

CEO of Pattern Energy, a developer of wind energy and transmission projects across North America and Latin America.

Torben Möger Pedersen

CEO of PensionDanmark, a Danish not-for-profit labour market pension fund established in 1993 which has invested or committed US\$1.5bn to solar and offshore wind projects.

Ian Mays

CEO of RES, a developer and operator of renewable energy projects globally.

Brad Nordholm

CEO of Starwood Energy, a private equity investment firm specialised in development, construction, ownership and operations of power generation and transmission projects in North America. It is an affiliate of Starwood Capital Group Global LLC.

Andrew Beebe

Chief Commercial Officer of Suntech, a China-based manufacturer of silicon solar modules for global markets.

Damian Darragh

Managing Director at Terra Firma, a European private equity firm with significant activities in renewable energy.

Peter Wesslau

Vice President of Renewables at Vattenfall, a leading European utility which has developed some of the world’s largest offshore wind farms.

For the purposes of this report, Mergers and Acquisitions (M&A) relates to all M&A transactions (mergers, acquisitions and minority investments) as well as private equity transactions including buyouts, public-to-private deals and secondary buyouts. The report is based on data available at the time of writing and no warranty is provided as to the accuracy of its contents.

Deal values are provided as the consideration value reported or announced. Figures relate to the actual equity stake purchased.



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As I review the results of our 2012 survey, in conjunction with the insights of our interviewees who once again have kindly agreed to participate and share their thoughts, I have been struck by what might be perceived as a paradox: for an industry that has been suffering from as large a number of hits and knocks as I have seen in my years covering the sector, there is a seemingly ever increasing appetite and activity amongst investors to identify suitable renewables projects to invest in. You may be right to question whether our survey respondents are believing too strongly in the old doctrine of ‘what doesn’t kill you makes you stronger’? Yet I am of the opinion that there is some truth in old doctrines so I remain optimistic that growth in renewable energy M&A will continue through 2012 and 2013.

The challenges are certainly evident for all to see. The Eurozone crisis has made financing even harder to come by for both primary and secondary assets, leading to a number of projects being grounded at the development stage, and major potential M&A deals stalling. The prospect of retroactive subsidy cuts, so detrimental to investor confidence, has once again reared its head as many European Governments begin to take action to address their sovereign debt issues and budget deficits. Subsidies continue to be driven down at breakneck speed, even in countries such as Italy and Germany which have been at the vanguard of renewable energy installations, causing fear that cost reductions achieved in the supply chain will be unable to keep pace and make projects uneconomic. In the US, there are obvious concerns over ongoing support for the industry, not least the possible effects that delays in renewing the PTC could have on the wind industry, concerns which are exacerbated by the uncertainty of the 2012 Presidential elections. Across continents, but especially in Europe and North America, renewables supply chains have been rocked by increased competition and reduced demand in sectors such as solar PV, resulting in huge pressure on margins and

headline casualties of some of the industry’s major brands.

Yet for each of these challenges, the optimist in me sees the opportunity. Subsidy cuts, for example in European solar PV, are making the question of grid parity, long the ultimate mantra of the industry, one of “when” rather than “if”. The demise of supply chain names and the job losses that result are desperately sad, but will inevitably result in opportunities for other new names to take their place, and for the players of tomorrow to both build on their forebears’ successes and to heed their mistakes. There are many other positive trends, which we explore in depth in the survey: ever increasing Asian outbound renewables investment to all corners of the globe; mammoth infrastructure spending plans in regions as diverse as Latin America, Africa and India; increasing identification of renewables as a mature asset class by financial investors; deployment and uptake of technologies such as offshore wind the list goes on.

The team and I have been working on our annual renewable energy M&A survey for five years and, without fail, the results that we receive from our respondents invariably make us stop and think, challenge any preconceptions that we might have of the industry and reconsider with a global perspective about how KPMG member firms work together and service our clients. As such, I continue to believe that, more than ever, this report offers valuable insights to those of us who operate in what is certainly one of the most dynamic M&A sectors around – I trust that you will agree.

Andy Cox

Partner, KPMG in the UK

Global Head of Energy and Natural Resources for Transactions and Restructuring

foreword



Executive summary

Utilities shuffle their decks

The aggressive acquisition spree of utilities several years ago now seems a very distant memory. Indeed the past year has been notable for a series of divestments of renewable energy assets on the part of the major European utilities. E.ON and RWE disposed French onshore wind operations in 2011 and 2012, while SSE sold over 100 MW of UK operational onshore wind capacity in 2011. Italian utilities Terna and Sorgenia have been equally active, both having completed divestments of large tracts of solar PV assets to financial investors in 2011.

In line with this new cautious spirit, it should also be noted utilities are reining in new acquisition activity. Some 40% of survey respondents expect utilities to be 'very active' in

acquiring and investing in renewable energy assets during the next 18 months, which makes them less active than independent power producers (45%) and infrastructure and private equity funds (44%). This is in contrast to last year, when utilities were nominated the most likely acquirers of renewable energy assets.

These developments should not be taken out of context. Nearly every interviewee categorized utilities' current divestments as part of a non-core disposal strategy rather than a major shift in direction. Similarly, utilities reduced appetite for new assets should not be confused with a lack of commitment to the sector. Many of the major European utilities are now shifting their focus from M&A to the development and operation of their existing renewable asset portfolio.



Over **40%**

US\$7.9bn



40%

In 2011 42GW of onshore wind capacity and 25GW of solar PV capacity was installed, more than in any other year

believe that new investors and acquirers in renewable energy are most likely to come from China

Transactions totalling US\$7.9bn were announced in the US in 2011, an increase of 31% on 2010

Approximately 45% of banks surveyed plan to finance offshore wind projects during the next 18 months

of survey respondents expect utilities to be 'very active' in acquiring and investing in renewable energy assets during the next 18 months

Asia finally starts to make its move

It has been a long time coming, but Asian investors finally pushed the acquisition button in 2011. Asian companies announced 29 acquisitions totalling US\$2.1bn of assets based outside Asia in 2011, over 50% more than the volume of activity in 2010.

This trend is showing no signs of abating in early 2012. Japanese industrial conglomerate Mitsubishi announced investments in the German Borwin 1 and Borwin 2, offshore wind grid connection assets in the first few months of 2012 while its compatriot Marubeni announced the US\$850m acquisition of the UK offshore wind installation services company Seajacks in March 2012.

Survey respondents strongly believe that these transactions are an indication of likely levels of future deal activity from Asia. Over 40% believe that new investors and acquirers in renewable energy are most likely to come from China, while approximately a quarter believe that new players will emerge from Japan.

America – regulatory clouds loom over investors' favourite country

The USA continues to be the most attractive market for renewable energy M&A and investment, with over 46% of surveyed corporates and investors planning to target the country during the next 18 months. Survey respondents from the Asia-Pacific region favour the USA over every other non-domestic market, while European survey participants plan to target the USA over many major local markets including Italy, France and Spain.

M&A activity in the USA has been robust. Some 124 transactions totalling US\$7.9bn were announced in 2011, representing 21% of the total number of M&A transactions globally. This is a marked increase on the 103 deals totalling US\$6bn announced in 2010.

However the USA's current appeal is being challenged by severe policy uncertainty. The wind energy Production Tax Credit (PTC), which has been crucial in facilitating the financing of US wind projects, is due to expire at the end of 2012 and there is no certainty that it will be renewed. Over 80% of survey respondents stated that the extension of the wind energy PTC is crucial to their investment in the sector.

Concerns over the PTC aside, there is also a major question mark over whether tax equity investing will be sufficient to plug the funding gap created by the expiry of the 1603 cash grant programme at the end of 2011. There are encouraging signs in early 2012 that the tax equity market is returning with traditional tax equity investors JP Morgan and Wells Fargo both active and non-traditional tax equity investor Chevron showing an appetite to leverage this structure. However, the general consensus amongst survey respondents is that tax equity alone will be insufficient to replace the 1603 grant programme.

The Eurozone crisis: will governments go back on their subsidy commitments?

It would be difficult to ignore the impact of the global financial crisis on the renewable energy industry, and on renewable energy M&A during 2011. The Eurozone was inevitably the centre of attention, given the perilous state of many public sector finances in the region, and hence their borrowing requirements. Many detractors have been quick to point out that the PIIGS countries (Portugal, Ireland, Italy, Greece and Spain) all provided generous subsidies for renewable energy in the good years, a policy for which they are now paying in fallow times. However, where we have seen attempts by countries to claw back on subsidy commitments, this has led to uncertainty in the market and challenge from investors.

Looking at the impact the Eurozone crisis will have on future M&A activity, different markets can expect to be subject to different issues. Greece will likely remain in the doldrums, as fear of a return to the Drachma deters investors. Buyers are also likely to remain cautious in Spain so long as there is a 'will they, won't they' uncertainty of retroactive changes to existing subsidies in order to address the existing tariff deficit. In Italy, medium term M&A activity may be buoyant in the solar PV sector at least, as the rush for installations in 2011 will likely result in a large number of secondary assets coming to market. Meanwhile, Germany and other Northern European countries perceived as relative safe havens, may well see increased competition for assets amongst investors.

Offshore wind: getting the financing structure right

Survey data suggests that financing the offshore wind industry remains an unresolved conundrum. Only 21% of corporate and investor survey respondents plan to invest equity in offshore wind power assets during the next 18 months, making it the second least attractive renewable energy sub-sector, which demonstrates that only a minority of parties, such as the major utilities, have been able to find the right balance between risk and reward in this sector.

The major European utilities, whose current objective is to generate cash by divesting stakes in their offshore wind project portfolios which they can subsequently reinvest in new projects, are coming up with some highly innovative structures to attract new capital. This innovation has resulted in examples of pension funds and Japanese investors taking equity stakes in offshore wind farms, albeit at present this type of transaction is the exception rather than the norm. The construction risk associated with offshore wind projects, together with the limited operational history of completed projects, continue to represent challenging hurdles for this asset class for the majority of financial investors, such as infrastructure funds. In contrast, many banks are gradually becoming more comfortable with the risks associated with financing offshore wind projects. Approximately 45% of banks plan to finance offshore wind projects during the next 18 months, more than the proportion that are planning to finance geothermal (42%) or solar CSP (40%).

It's now all about cost efficiencies

Renewable energy generation costs continued to fall significantly in 2011 to the extent that the industry is now talking about when, rather than if, grid parity will be reached. The cost of solar power generation decreased most in 2011, underpinned by significant expansion of manufacturing capacity in East Asia. Onshore wind costs also continued to decline rapidly such that operational projects are starting to implement market-based contracts in markets such as Germany.

Substantial cost reductions helped drive renewable energy installation to record levels in 2011, in which 42GW of onshore wind capacity and 25GW of solar PV were installed, more than in any other year.

It is clear that costs must keep falling if installation levels are to be maintained, not least in light of feed-in tariff cuts in major European markets. Germany and Italy, which together accounted for approximately half of global solar PV installations in 2011, have both implemented major tariff reductions. Both the UK government and the offshore wind industry are targeting economic operation under a £100 per MWh revenue scenario within the medium term, representing a reduction of between 30% and 50% on current levels.

In terms of onshore wind installations, there is an expectation that levels may decline significantly in China in 2012 as the country focuses on connecting that capacity that is still not yet connected to the grid. This is likely to impact global installation materially given that 43% of global wind capacity brought online in 2011 was installed in China.

Despite these concerns, survey respondents remain optimistic that ongoing cost efficiencies will ensure that renewable energy new build will not be adversely impacted by subsidy upheaval in many major countries. Indeed 75% predict that new build will remain steady because grid parity will be achieved for the leading technologies within the next few years. In short, the future of renewables still looks bright.



Placing 2011 in context

2011 yet again represented an exciting year in the ongoing development of the renewable energy industry. The two dominant sectors continue to be wind and solar PV, which both experienced record levels of installations. With 42GW of new wind and 25GW of solar PV, more than US\$100bn of capital was deployed in these technologies alone, across an ever growing number of countries, each with their own individual market characteristics.

Overall, renewable energy M&A activity shifted up a number of gears in 2011. A total of 591 deals valued at US\$51.2bn were announced during the year, a significant increase on the 431 transactions totalling US\$24.2bn recorded in 2010. A surge in wind and solar PV M&A activity, which increased 132% and 37% respectively, was the principal driver. As predicted in our 2011 report, last year was also notable for a substantial rise (300%) in the total value of M&A transactions in the biomass sector. Alongside increased transaction activity, the average deal size expanded by over 50% to US\$86.6m in 2011, underlining the growing maturity of the

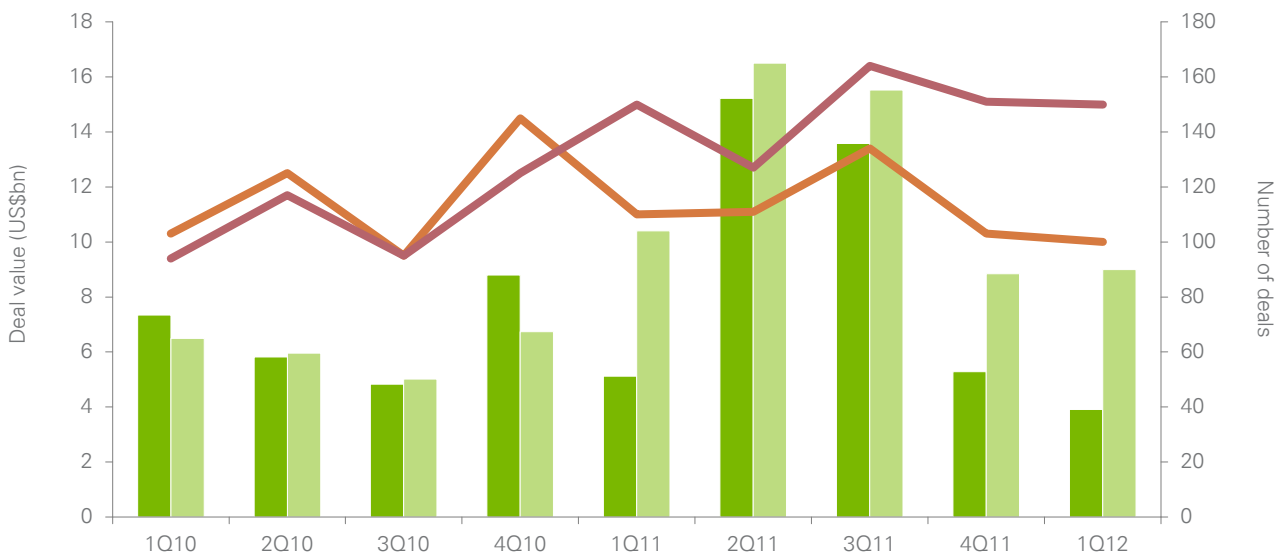
sector, although the total number of super-size billion dollar plus deals declined.

By the end of 2011 the market was beginning to show signs of cooling. In the final quarter, the value of announced M&A deals declined 44% to US\$8.75bn by reference to 3Q 2011 and the number of deals slipped from 164 to 150. In parallel, the renewable energy project finance environment deteriorated significantly as a direct result of the Eurozone sovereign debt crisis. In 4Q 2011 only US\$33.4bn was allocated to renewable energy projects globally, a 39% decrease on the previous quarter and 13% below the quarterly average during the last three years.

Activity has not picked up in the beginning of 2012. Some 150 M&A transactions totalling US\$9bn were announced in 1Q 2012, only a slight increase on the previous quarter. That being said, the table of the largest transactions below (with announced values) highlights the sector's appeal to a broad range of acquirers, including utilities, financial investors and corporates around the world.

Renewable energy M&A activity (1Q 2010 - 1Q 2012)

- Value of completed deals
- Value of announced deals
- Number of completed deals
- Number of announced deals



Source: Clean Energy pipeline

591

M&A deals valued at US\$51.2bn were announced during 2011, a significant increase on 2010

Top announced renewable energy M&A transactions (May 2011 to date)*

Target(s)	Sector	Nature of target	Target country	Acquirer(s)	Acquirer Country	Value (US\$m)	Announcement date	Vendor	Stake (%)
SunPower Corp.	Solar	Supply Chain	USA	Total SA	France	1,380	03/05/2011	Listed company	60
Wind farms (480MW) - Iowa, Texas and others	Wind	Project	USA	Algonquin Power & Utilities Corp.	Canada	900	09/03/2012	Gamesa Corporacion Tecnologica SA	100
Wind farms (443MW) - Castilla y Leon province	Wind	Project	Spain	Bridgepoint	UK	877	12/08/2011	ACS Actividades de Construcción y Servicios SA	100
Seajacks International Ltd.	Wind	Supply Chain	UK	Marubeni Corp., Innovation Network Corp. of Japan	Japan	850	19/03/2012	Riverstone Holdings LLC	100
Wind farm (277 MW) - Borkum Riffgrund 1	Wind	Project	Germany	KIRKBI A/S, Oticon Foundation	Denmark	836	23/02/2012	DONG Energy A/S	50
Hansen Transmissions International NV	Wind	Supply Chain	Belgium	ZF Friedrichshafen AG	Germany	725	25/07/2011	Suzlon Energy Ltd., Ecofin Ltd.	26
BVP SA	Wind	IPP	Brazil	CPFL Energias Renováveis SA	Brazil	621	24/02/2012	Fundo de Investimentos e Participações Amazonia Energia and Servtec	100
Solar plants (86MW) - Ontario	Solar	Project	Canada	TransCanada Corp	Canada	454	20/12/2011	Canadian Solar Solutions Inc.	100
Desenvix Energias Renovaveis SA	Wind	IPP	Brazil	Statkraft Norfund	Norway	440	15/08/2011	Jackson Empreendimentos Ltda and Funcef	40.65
Nuova Rete Solare Srl	Solar	IPP	Italy	Terra Firma Capital Partners Ltd	UK	376	28/07/2011	Terna - Rete Elettrica Nazionale SpA	100
Renewable Power International SL	Hydro	IPP	Spain and Portugal	Demeter Partners Cube Infrastructure Fund	France	330	08/07/2011	RP Global Holdings SL	100
Lac Alfred	Wind	Project	Canada	Enbridge Inc	Canada	330	03/11/2011	EDF Energies Nouvelles	50
Gunfleet Sands	Wind	Project	UK	Marubeni Corp	Japan	324	01/09/2011	DONG Energy A/S	49.9
Wind farms (140MW) - Galicia, Castilla-La Mancha, Catalonia and La Rioja	Wind	Project	Spain	Canepa Asset Management	Spain	315	05/08/2011	ACS Actividades de Construcción y Servicios SA	100

* Only includes deals where value is publicly disclosed

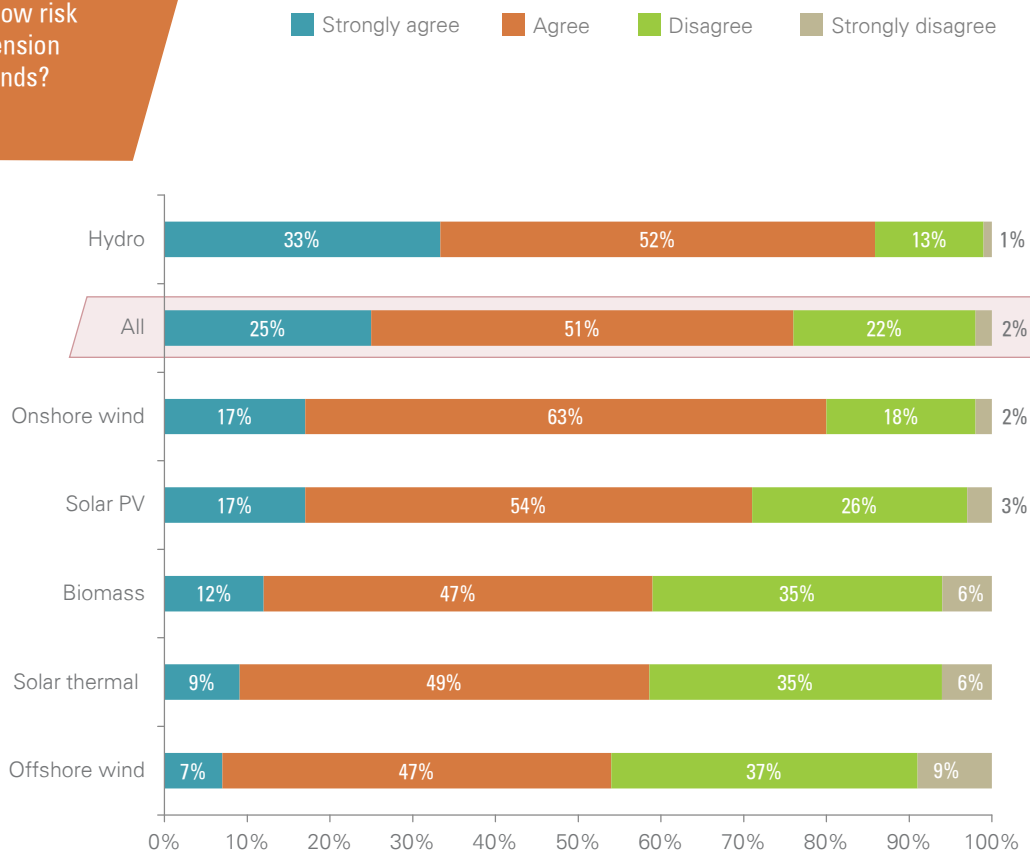
Source: Clean Energy pipeline

Looking ahead to 2012 and beyond


A maturing and attractive asset class – renewables as a long term resting place for investors' capital?

Following a year of mixed fortunes for renewables, a positive note for the forthcoming period - our survey respondents are emphatic in the belief that renewables as an asset class is becoming increasingly attractive to long term investors, who continue to refine their understanding of risk profiles, and to apply this knowledge to appropriately price assets. Hiroshi Sakuma, Senior Vice President of Mitsubishi Corporation sees operating renewables as an asset class that represents “low-risk low-return steady revenue projects”, a view shared by a resounding majority of survey respondents:

To what extent do you agree that the following renewable energy assets are attractive to investors seeking long term low risk returns, such as pension or infrastructure funds? (All respondents)



As can be seen, more than 50% agree that for each asset class identified, renewable energy investments represent a sound alternative as a resting place for investors' capital; and with hydro, onshore wind and solar PV technologies more than 70% agree. To confirm this growing perception of the industry's maturity, as well as perhaps the paucity of alternative investments, survey respondents identified that infrastructure and PE funds would be second only to independent power producers (IPPs) as an investor class in renewables in the next 18 months (notably ahead of utilities), and that less than 10% of funds would either have minimal or no activity.



Ian Mays, CEO at RES, comments that the increased appetite of financial investors supports this view of market maturity:

“In Europe there is adequate capital from financial investors for the number of projects coming forward. If anything, there is probably a shortage of good projects.”

He continues: **“RES sells some of the projects it develops and retains some. Traditionally it would have always been utilities that would have been the buyers. That’s no longer the case and on balance we are now selling more projects to financial investors as well.”** The experience of developers such as RES is supported by financial investors. For Torben Möger Pedersen, CEO of PensionDanmark, which has invested or committed US\$1.5 bn to solar and offshore wind projects, renewable energy represents a solution to his need to **“identify asset classes with expected returns above the bond market but with lower risk than on the listed stock exchanges”**.

A number of major deals which have been announced in recent months reflect the strong appetite from long term infrastructure investors to step in to the renewables space:

- Bridgepoint acquired 442.5 MW of Spanish onshore wind assets from ACS for €636m, announced in August 2011.
- Mitsubishi Corporation (34%) in tandem with Dutch pension fund PGGM, together acquired a 67.5% stake (February 2012) in the 396 MW Mareña Renewable wind project situated in the state of Oaxaca, Mexico.
- Marubeni Corporation acquired a 49.9% stake in DONG Energy’s Gunfleet Sands operational offshore wind farm in November 2011.

Given the short to medium term expectation of low interest rates and volatile equity markets, and visibility over current deal pipelines, KPMG’s expectation is that the recycling of secondary assets is a trend that will continue strongly going forward. This view is fully supported by our survey – a resounding 85% of respondents agree with the statement that **“renewable energy dealflow will remain robust for the next five years”** – food for thought for the industry’s naysayers and supporters alike.

Retroactive clouds on the horizon?

However, the industry is not without its threats and weaknesses. For those respondents who agree that operational renewables assets are attractive to investors seeking long term low risk returns, 58% agree that the fact that projects are often over-leveraged, results in low and uncertain yields in early years. Tellingly, 74% of the same group believe that there are uncertainties around long term asset performance and the risk of retroactive tariff cuts, and 76% refer to the risk of retroactive tariff cuts as affecting confidence in the sector as a whole.

We agree that the risk of retroactive action, and the detriment to investor confidence that results, is one of the greatest threats to continued deal-flow. Spain represents a test case which other governments struggling with deficit problems would be wise to consider. In 2010 the Spanish Government announced retroactive changes to renewables projects, which principally impacted the thousands of MWs of solar PV that had been installed prior to September 2008. Investor appetite was shattered and the Government continues to be legally challenged by a group of international investors. Investor confidence returned to the sector with a number of substantial M&A transactions in Spain during 2011 across asset classes (e.g. the acquisition by Munich Re and KKR of a 49% stake in T-Solar’s operating solar PV assets in July 2011. First Reserve’s creation of the Renovalia Reserve JV with Renovalia in December 2011; and the various investments in ACS’s CSP assets by GE, RREEF, Antin and KGAL). However, recent announcements suggest that the spectre of retroactivity appears to have returned in 2012, and this is certainly spooking potential investors.

Liam O’Keeffe, Managing Director and Head of Project Finance at Crédit Agricole explains: **“There is a danger that governments, particularly in difficult times, start to review where they can cut. If subsidies are too great they may feel that this is an easy win. What happened in Spain was a shock.”**

The deals described are characterised by the recycling of assets primarily from domestic developers, construction companies and private equity investors to long term owners of assets seeking a ‘low risk/low return’ type yield. The deals are vital to ensure the financial health and continued origination activity of the primary participants and are predicated on the continued existence of incumbent project level finance facilities following the change of ownership and low (or no) tariff risk. Investors outside of Europe may take comfort from the fact that retroactivity appears to be principally a European issue, but in any market where governments seek to move goal posts on which investors have based their investment decisions, the risk to that market is profound. In the wider energy sector, the Argentine Government’s decision to renationalise YPF is an indication if it were needed that a perceived re-positioning of Government policy is not merely a European issue.

Governments know that retroactivity undermines confidence. However, if governments face no alternative but to reduce the future cost burden from historic renewables installations, then perhaps a single, short, sharp, and fair shock will minimise systemic long term asset issues and investor distrust.

If renewables are to continue progressing, the next decade must be dominated by the race to remove subsidies

A victim of its own success? Ability to deliver cost reductions will increasingly define the industry's future

One development that increasingly attracted attention through 2011 is the decreasing cost of renewables, reflecting the shift towards the mainstream of power generation mix decision making as the sector matures. Whilst the last decade produced an explosion in renewables activity which could claim 'zero fuel costs', the vast majority of installations are currently supported by revenue subsidies that will be paid for by consumers (directly or indirectly) for 10 to 25 years of projects' lives. With economic austerity biting in the core European markets and the level of installations with high subsidies mounting fast, the sector has faced a combination of some drastic subsidy reductions and an unprecedented level of negative public relations.

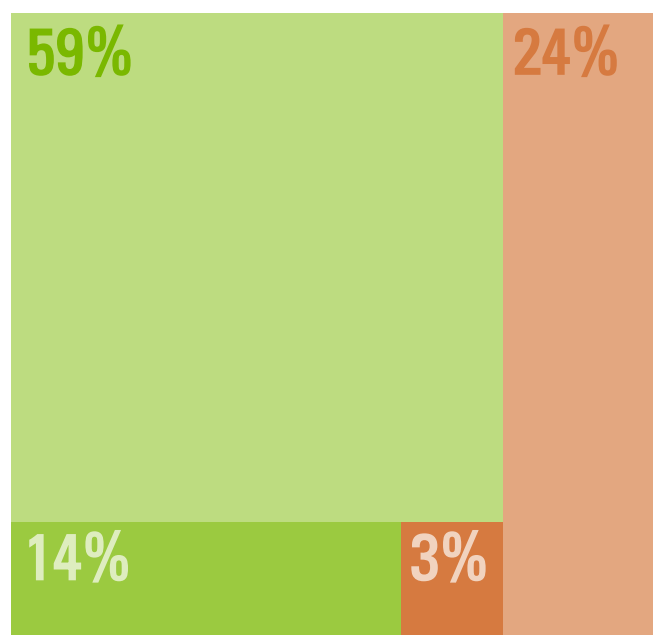
If renewables is to continue progressing, the next decade must be dominated by the race to remove subsidies. Looking beyond grid parity alone, industry stakeholders will need to work hand in hand with legislators and regulators to address the broader infrastructure implications of renewables for consumers (back up, connection costs and energy storage) in the overall cost and benefit analysis.

The industry recognises the challenges, and is supportive (and indeed bullish) of the drive to reduce costs; seeing it as essential to continued growth in the sector. Our survey results show that 73% of respondents expect new build to remain steady as costs are rapidly falling and grid parity is expected to be achieved for leading technologies within a few years (at least in certain sectors).

Likewise, whilst renewables has arguably experienced its toughest political and economic challenges in recent months, the industry believes that support for the sector across the board remains strong and will continue to deliver growth.

To what extent do you agree that new build will remain steady as costs are rapidly falling and grid parity is expected to be achieved for leading technologies within a few years? (All respondents)

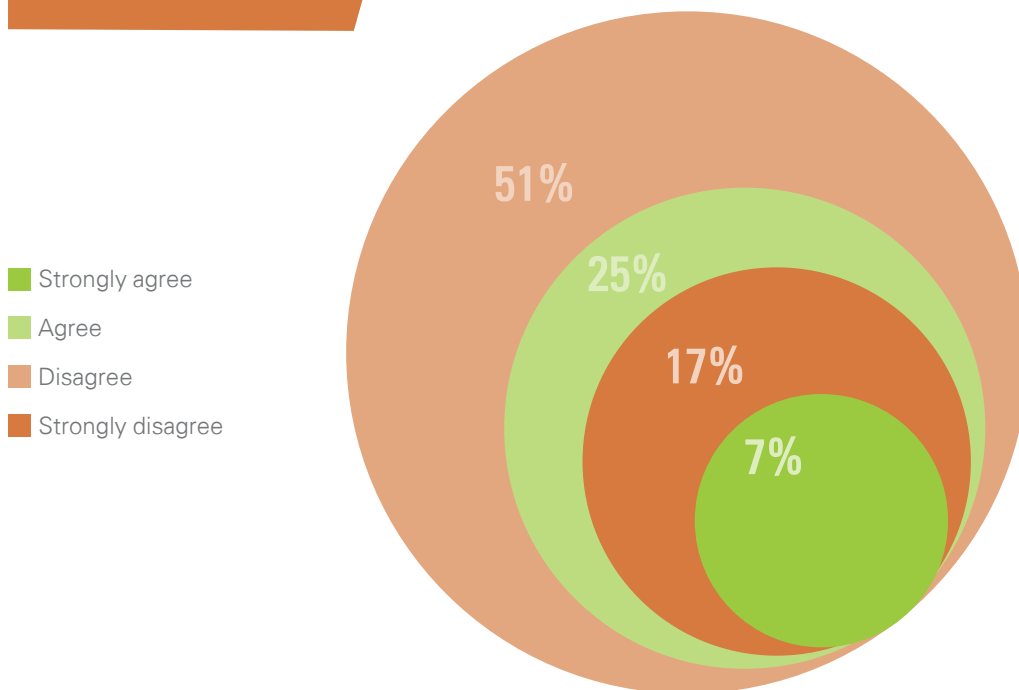
- Strongly agree
- Agree
- Disagree
- Strongly disagree



73%

of respondents expect new build to remain steady as costs are rapidly falling and grid parity is expected to be achieved for leading technologies

To what extent do you agree that renewable energy new build faces a hiatus as policy makers, the public and engineers are all turning away from the sector? (All respondents)



68% of respondents disagree with the statement that renewable energy new build faces a hiatus as policy makers, the public and engineers are turning away from the sector

The renewables sector is reacting fast to the cost pressures, albeit with inevitably painful outcomes. First Solar's announcement in April 2012 that the company was to shed 30% of its 6,800 strong workforce and close its manufacturing facility in Germany dealt a further blow to the German solar PV manufacturing sector. The positive counterweight to the negative news of the restructuring being to lower the company's average manufacturing costs by 4 cents to US\$0.70 per watt.

Brad Nordholm, CEO of Starwood Energy, reflects the views of a growing number who expect renewable energy to rise to the challenge: "The price of renewable energy is plummeting to the extent that wind PPA contracts in some areas of the US are at levels that are very competitive with natural gas and conventional fuel

sources. Solar is also within striking distance. We are looking to the future and are seeing renewable energy technologies becoming more price competitive."

Andy Cox at KPMG points to the recent revenue based changes being experienced in the German market as evidence that grid parity is a topic for today as well as tomorrow. "Thousands of MWs of operating onshore wind projects in Germany now have direct supply offtake contracts with energy traders such as Statkraft, and are achieving premiums of 5% plus to the existing feed-in tariff. The market is therefore working in Germany, with the feed-in tariff doing its job of acting as a floor to returns should prices fall away. Whilst German feed-in tariffs, which are fixed for 20 years, have not offered the 'inflation-proof' yields of other markets; the fixed nature encourages an early interplay between tariff and market prices."

A difficult balance for governments – reduce subsidies to offset cost reductions ... but not too fast

In the face of cost reductions, there is a difficult balance that needs to be achieved in terms of continuing to support a still nascent yet growing industry and ensuring exceptional profits are not being made by developers and investors at the expense of tax-payers and consumers. In 2011 and into 2012, we are seeing government after government pull back on subsidy commitments, leading to 'mad dashes' of installations in advance of expected tariff reductions. In solar PV, the huge numbers of installations in Germany and Italy in 2011 were driven by anticipated tariff reductions which have now crystallized. Onshore wind, dependent on a far wider range of markets, is experiencing subsidy reductions or regulatory uncertainties across a number of key markets including the US, Germany, UK, Italy, Spain, France and even China, which underpinned global wind installations in 2010 and 2011. The Chinese Government has set a new five year plan driven by MWh generated rather than MW installed. There is a shift in focus to connecting those MWs not yet grid connected, as a result, new capacity could collapse in 2012. The outcome of such policy changes is likely to be keenly felt throughout supply chains with a consequential impact on renewables sector employment.

Governments have often been criticized for their approach to managing changes in tariffs, to reflect falling costs in particular. Ian Mays observes: "In the solar PV sector in the last couple of years, across Europe, government incentives have effectively been caught out by the pace of price decreases. There is a big lesson that hopefully governments are learning. In this sector what you need are mechanisms that are flexible enough to follow changes in the price of the technology to avoid the need for over-corrections, which has had a huge impact on the solar PV market in a number of European countries."

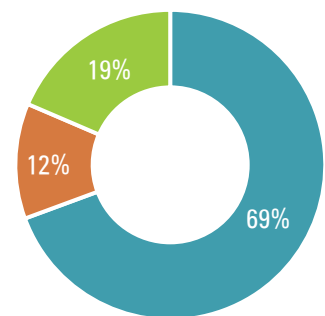
The impact on M&A of this fast paced change in cost and resultant government legislation is still being determined, and may in fact not be known until there is visibility of how reduced subsidies actually impact installations. Certainly the value of development pipelines with lead times that go beyond the timeframe of tariff reductions will be negatively impacted, but as Andy Cox notes, for some time now "there has been little appetite to pay good value for these 'jam tomorrow' development pipelines". Record installations of wind and solar PV should ensure that there are sufficient opportunities for longer term investors to acquire sub-US\$100m newly built secondary assets in the near future. Indeed, the need for consolidation was ranked second highest (after the availability of funding) as the key driver for M&A over the next 18 months.

Survey respondents agree that the focus will be on small to medium sized deals:

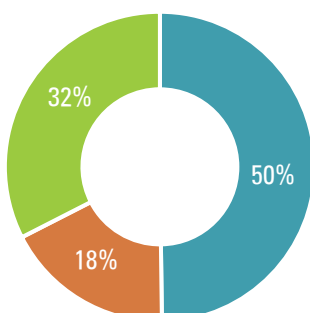
How do you expect the following aspects of the renewable energy M&A environment to evolve during the next 18 months? (All respondents)

- Increase
- Decrease
- Stay the same

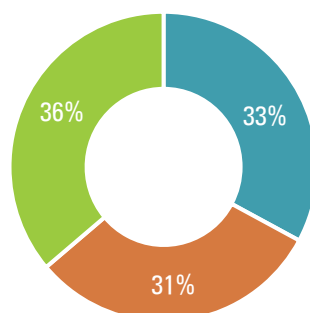
Number of deals < US\$50m



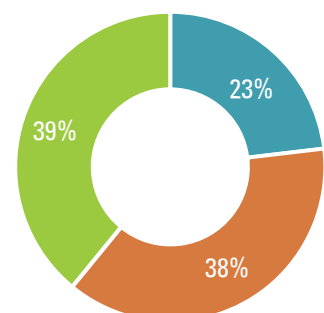
Number of deals between US\$50m and US\$0.5bn



Number of deals between US\$0.5bn and US\$1bn



Number of deals > US\$1bn



65%

of respondents believe that the average deal size will continue to rise

Overall survey respondents are optimistic that renewable energy M&A activity will build on the momentum of 2011 and scale new heights during the next two years. Some 44% of survey respondents expect the number of deals to increase. There is particular confidence that the number of smaller, sub-US\$50m, deals will grow (69% of survey respondents) and that the average deal size will continue to rise (65% of survey respondents). However, mega deal activity (over US\$500m) is predicted to remain muted during the next 18 months.

Utilities pruning their portfolio gardens

Recent months have seen a range of utility divestments in the renewables space. However, it would be a mistake to assume that this spate of divestments is representative of utilities going cold on the renewable energy sector as a whole. Indeed for many utilities, renewable energy represents an increasingly significant proportion of their overall profits. For example E.ON generated EBITDA of Eur1.5bn from its renewable energy activities in 2011, representing 16% of total EBITDA, up from 9% in 2010.

“One shouldn’t mistake the sale of a few assets here and there as a major change in strategy,” confirms Peter Wesslau, Vice President of Renewables at Vattenfall. **“Most if not all European utilities are facing the same issues in terms of capital requirements. A lot of people are simply pruning their portfolios to ensure that they have the best stuff left”.** Examples of this ‘pruning’ include European utilities E.ON and RWE disposing of onshore wind activities in France during 2011 or 2012, a market in which they are not otherwise strategically located. Likewise UK utility SSE divested over 100 MW of UK onshore wind capacity obtained through the Airtricity acquisition. As these projects had long term off-take contracts with another utility, they lacked the necessary core strategic value to SSE.

Italian utility Terna is even further ahead in its divestments, having sold its solar PV project development subsidiary Rete Rinnovabile Srl for US\$933m (March 2011) and 78.5 MW of solar PV assets for US\$367m (October 2011) to private equity firm Terra Firma. Damian Darragh, Managing Director at Terra Firma, summarises the current status of many major European utilities: **“Right now utilities are not in the best financial position. They entered the sector before the financial crisis. Many had fairly aggressive business plans**

and few based the financial crisis or a decrease in demand. There was a lot of expansive M&A and a lot of leverage available to utilities and they used it. Most of these businesses were poorly placed to handle the financial crisis. The result is that many are now divesting non-core assets.”

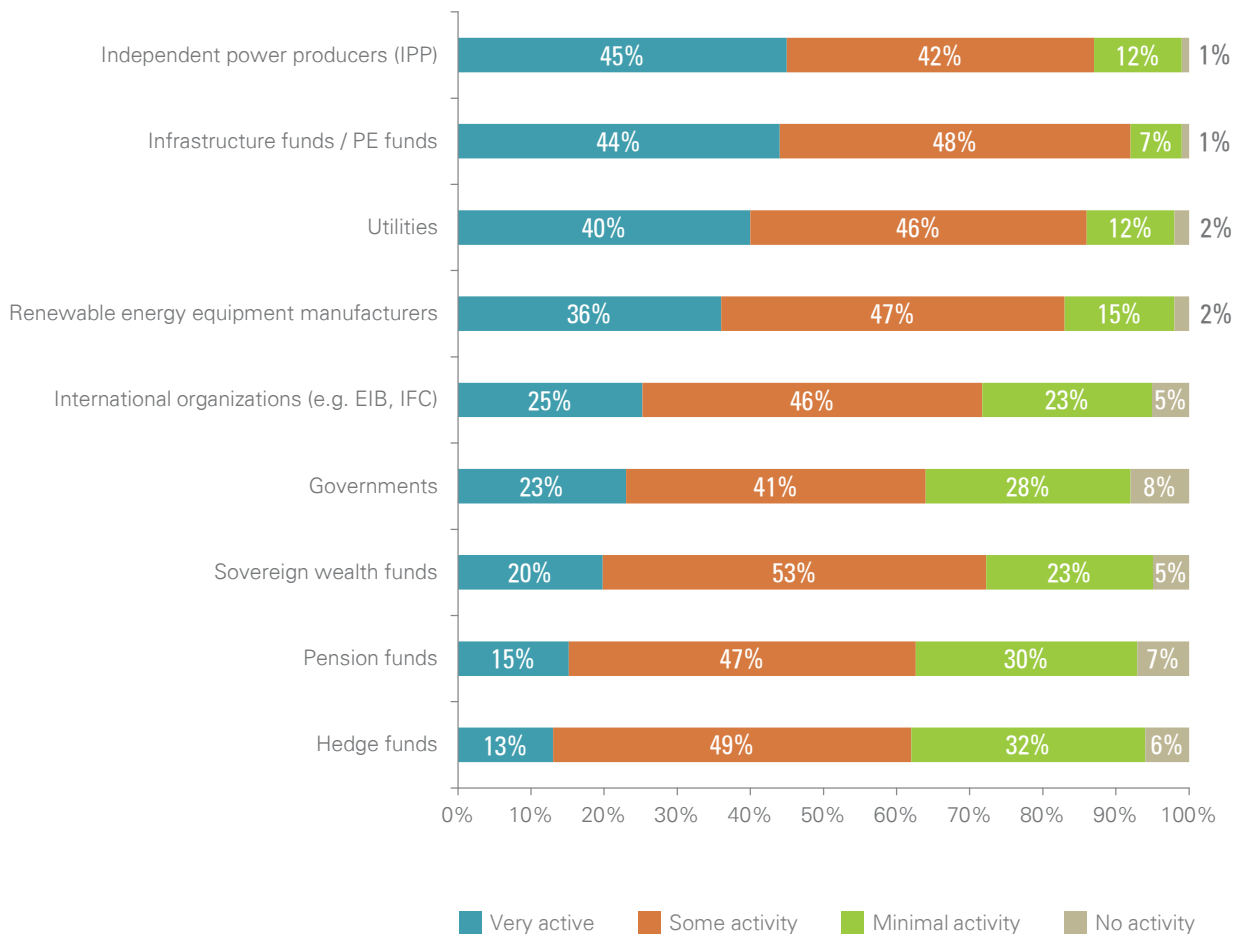
Darragh added **“what makes matters worse is they have the ratings agencies on their back whilst they are looking to trim their balance sheets. That’s quite a difficult position for them to be in when you are trying to build renewable energy assets, which are by their very nature capital intensive. That opens the market for financial players like us. If you look at the deals we completed in 2011, we transacted 5 or 6 deals where we bought assets from major utilities. We acquired assets from SSE, E.ON, Terna and Sorgenia. Some of these deals were regulatory-driven but others were underpinned by large utilities not wanting to own what they viewed as non-core smaller renewable energy generation assets.”**

American utilities are also adopting an increasingly cautious approach to renewable energy although, unlike their European counterparts, are simply scaling back new investment. **“A lot of US utilities are trying to protect their balance sheets due to the general adverse financial context,”** explains Tristan Grimbert, CEO of enXco, a subsidiary of EDF Energies Nouvelles.

“It’s not that they are divesting renewable energy assets, rather that they are investing less. We have seen a shift during the last few years of utilities preferring to enter into PPAs rather than actually owning assets. I actually think this is probably just a short-term trend and that in the future there will be a mixture between owning assets and entering into PPAs.”

In addition to divesting non-core renewable energy assets, utilities are also expected to limit new acquisition activity in the next 18 months. Approximately 40% of survey respondents expect utilities to be very active in acquiring and investing in the renewable energy sector during the next 18 months, making them the third most active acquirer, behind independent power producers (45%) and infrastructure and private equity funds (44%). This contrasts with last year when survey respondents predicted utilities to be the most active acquirers within the renewable energy sector.

How active will the following institutions be in acquiring and investing in the renewable energy sector over the next 18 months? (All respondents)



The obvious exception to this trend is offshore wind, which in the last 12 months has established itself as the preferred alternative energy for many utilities. Across the North West European markets there is a core of close to 15 utilities that are committed to huge investments in the offshore wind space.

Utilities seem particularly attracted to offshore wind assets because their scale is much more in line with their traditional generation assets. **“There is a slightly different dynamic around offshore wind,”** confirms Darragh. **“It’s in the territory where utilities are comfortable, where they can own a small number of large plants. That is why the major utilities are much more active around the offshore space than they are in solar and onshore wind.”**

Many major utilities are active in M&A to bolster their offshore development pipeline; Danish utility DONG Energy seems particularly busy, while Vattenfall recently acquired the Sandbank 24 offshore wind farm situated in German waters. Several more major utilities are seeking further offshore wind projects to construct over the coming years.

In parallel certain utilities have recently taken to divesting stakes in offshore wind projects. For example DONG Energy has divested around 50% stakes in its Borkum Riffgrund 1 and Gunfleet Sands offshore wind farms during the past six months, while several other utilities are seeking partners to acquire stakes in their offshore wind portfolio. This should not be taken as a sign that utilities are going to start shunning the offshore wind sector. Put simply, the huge volume of capital required to bring offshore wind farms to fruition means that utilities need to sell minority stakes in their projects to third-party investors to free up funding for new projects.

It would be remiss to paint a picture of renewable energy M&A as an activity limited to major utilities with large balance sheets. In recent years smaller utilities and independent power producers have become increasingly active acquirers. Survey respondents expect independent power producers to be the most active acquirers of renewable energy assets during the next 18 months, with 45% expecting them to be very active. Last year independent power producers were only ranked third most active renewable energy asset purchaser, behind utilities and infrastructure and private equity funds.

Examples of smaller utilities investing in the sector are becoming increasingly commonplace and can be expected to continue. Swiss utility EOS Holdings acquired over 160 MW of onshore wind capacity in 2011, while German power producer Stadtwerke München has acquired stakes in three offshore wind farms in the last two years in addition to a range of investments onshore. Transactions of this nature appear to be becoming more frequent. However, the financing power of many of these mid-sized power producers means that their overall impact on the sector is limited.

“I don’t think that they will be a material part of the solution in the end, even though we have seen some activity recently,” explained Peter Wesslau. **“They will be part of the solution although the universe of these players is finite. Their return requirements can be lower as they are politically driven but from our discussions I can tell you that they are really not willing to concede that much.”**

45%

of respondents expect independent power producers to be very active acquirers of renewable energy assets during the next 18 months

Asia grasps the renewable energy M&A nettle

One of the major predictions in last year’s report was that 2011 and 2012 would witness a major increase in outbound investment from East Asia. This prediction looks increasingly accurate. Asian companies announced 29 acquisitions of companies based outside Asia totalling US\$2.1bn in 2011, a 50%+ increase on the 18 deals totalling US\$1.3bn announced in 2010.

Japanese trading houses and industrial corporations have been extremely active. In September 2011, Marubeni Corp, one of Japan’s largest trading conglomerates, announced the acquisition of a 49.9% stake in the 172 MW operational Gunfleet Sands offshore wind farm for £200m. In similar fashion, Mitsubishi Corp recently scaled up its international M&A activity, announcing its intention to acquire stakes in the HelWin 2 and DoIWin 2 German North Sea offshore wind transmission assets in March 2012 to add to its announced US\$318m purchases of stakes in the BorWin1 and BorWin2 German offshore wind transmission assets a month earlier. In the past six months, Mitsubishi Corp has also acquired a 34% stake in the 396 MW Mareña Renewable wind project situated in the state of Oaxaca, Mexico and a 50% stake of the Walney 1 UK undersea offshore wind transmission assets.

Chinese companies have also become increasingly active this past 12 months. By way of example, in March 2012, the Chinese solar equipment manufacturer LDK Solar acquired a 33% stake in the German solar PV components supplier Sunways AG, following on from its US\$33m acquisition of US solar turnkey installation provider Solar Power Inc. a year earlier.

Japanese interest seems to be more geared around learning how certain products and processes work with an aim of leveraging that knowledge in other parts of the world.

Andy Cox, KPMG

Significantly, the rationale behind this surge in M&A activity by Asian companies differs by country. Japanese expansionist M&A activity will be driven by large trading companies and industrial corporations investing in renewable energy infrastructure projects that offer long term low-risk returns. Hiroshi Sakuma explains his perspective, **“We are primarily interested in power projects; with regards new technology development, there is a limit to the extent of our funding. We continue to invest in the power business and infrastructure projects as they provide steady revenue for our company. We have invested in lots of coal and natural gas resources, but those are generally exposed to the market. Management are keen that a portion of our projects should be invested in infrastructure projects.”**

In contrast, investment from China looks set to take the form of the leading equipment manufacturers acquiring pre-construction stage projects or development companies to facilitate the deployment of their products in western markets. As Andy Cox summarises: **“It’s an interesting contrast. Chinese outbound investment seems very much centred around their OEM players deploying their highly competitive technology into new markets. Japanese interest seems to be more geared around learning how certain products and processes work with an aim of leveraging that knowledge in other parts of the world. They also genuinely see the value and the returns that can be made and are looking for long-term stable returns.”**

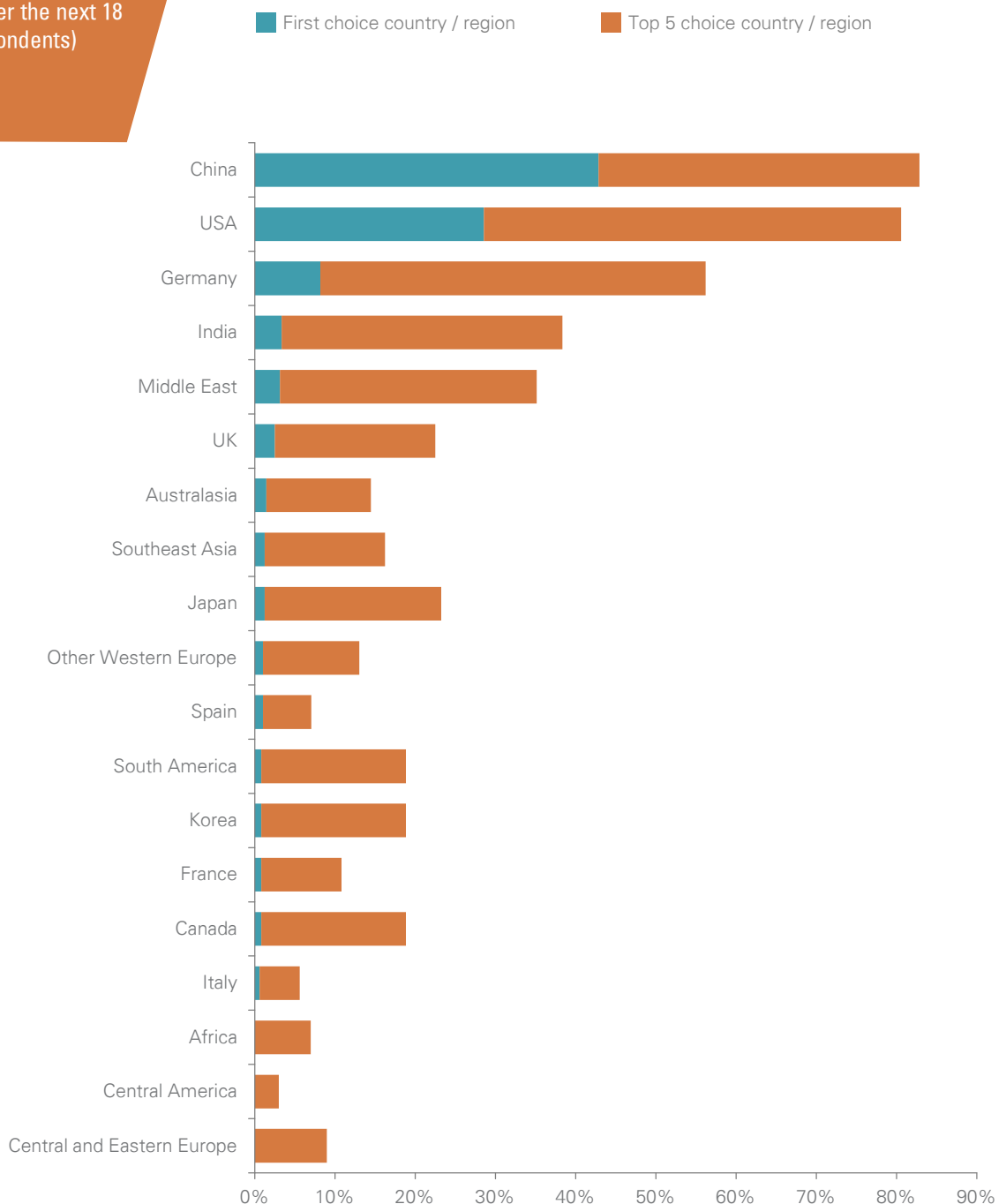
Over 40% of survey respondents selected China as the country from which new investors and acquirers are most likely to emerge during the next 18 months, followed by the USA (29%) and Germany (8%). Almost a quarter of respondents also believe that Japan will be amongst the top five countries from which new acquirers will emerge. Interestingly almost 20% of survey respondents also expect a significant number of new investors to emerge from South Korea during the next 18 months. This trend is already starting to manifest itself. During the second half of 2011 South Korean industrial giant Hanwha Group acquired US solar developers OneRoof Energy for US\$8m and Crystal Solar for US\$15m and South Korean petroleum major SK Innovation invested US\$50m in the Texas-based solar panel manufacturer HelioVolt.



Over **40%**

of survey respondents selected China as the country from which new investors and acquirers are most likely to emerge during the next 18 months

From which regions or countries are new investors and acquirers most likely to enter the global renewable energy market over the next 18 months? (All respondents)



This trend for Asian outbound investment is certainly one that we expect to continue. East Asian international investment may grow rapidly in the coming years but it will not be the all-curing funding panacea for European and North American renewable energy companies. As Hiroshi Sakuma comments, **“We like mature markets such as the US and Europe, but at the same time we are very interested in emerging markets where we understand the politics and the power industry. For example, we have invested in the renewable energy sector in Mexico, where we have had a power business since 1965.”**

“So we will continue to invest in emerging markets as long as we understand the local industry. But we don’t know much about South Africa, Morocco or Turkey, so we are avoiding those markets. We are also interested in southeast Asian markets such as Indonesia, Vietnam, Thailand and the Philippines, but less so in China and India.”

In complete contrast, the fact that Chinese overseas investment will be underpinned by equipment manufacturers seeking to expand into new markets means they will target countries in which they do not have a strong market presence. These are likely to be rapidly growing emerging markets such as South Africa, South America and central and eastern Europe, where established European and US renewable energy equipment manufacturers are not yet dominant.

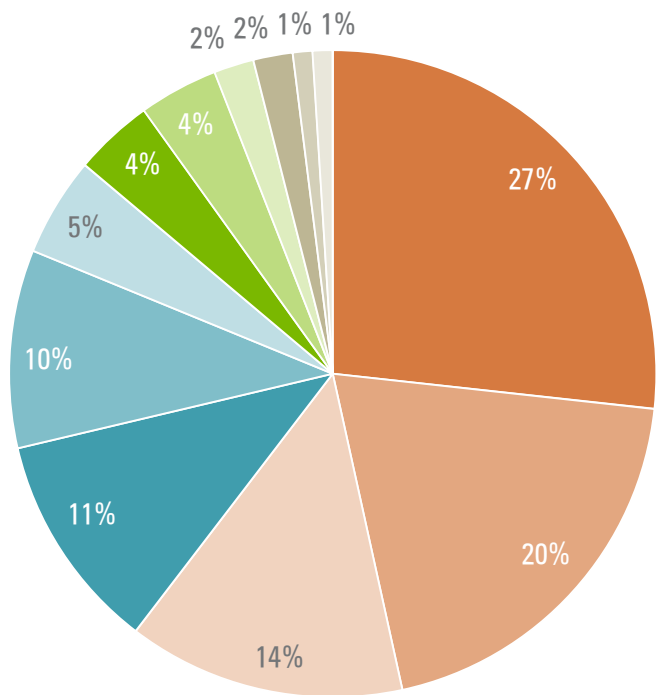
Over 27% of survey respondents from the Asia-Pacific region

(adjusted for those looking to invest in their own region) count the USA as one of their top three targeted countries for investment and/or acquisitions over the next 18 months, whilst over 20% are targeting Africa and over 10% are targeting Germany, South America and the Middle East. In contrast many established markets including the UK, targeted by 5% of Asia-Pacific respondents, Italy (4%), Spain (2%) and France (1%) are likely to be ignored.

The trend for Asian investors to target Africa ahead of stalwart ‘Old World’ countries is one that merits reflection. Together with the relatively high number of Asian investors targeting South America, this reflects a broader trend in the global economy of emerging economies increasingly investing in, and trading with, each other. Notwithstanding the potential geopolitical implications of such a change, the fact that sophisticated investors are willing to accept the risk profile bodes well for African countries as they are being seen as ever more investible. There are no doubts that the natural renewable energy resource across the African continent is huge, as is the requirement for reliable sources of energy that are not necessarily dependent on fuel supply or long transmission links that can be easily interrupted. Given these factors, there has been some debate as to whether the African energy sector can reflect the development of telecommunications on the continent, whereby the advent of a new technology (i.e. mobile telephony or renewable energy) results in developing countries being able to bypass or leap ahead of a previous technology phase (i.e. landlines, or large scale conventional energy).

In which country or region is your company most likely to invest in or acquire renewable energy projects or companies over the next 18 months? (Please select up to three countries/regions) (Corporates and Investors – ASPAC respondents only)

- USA
- Canada
- Africa
- Italy
- Germany
- Central and Eastern Europe
- South America
- Spain
- Middle East
- France
- UK
- Other Western Europe



Note: investors targeting other ASPAC countries omitted from analysis

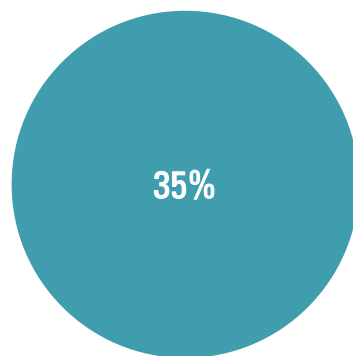
70%

of survey respondents indicate that it is harder to secure debt financing

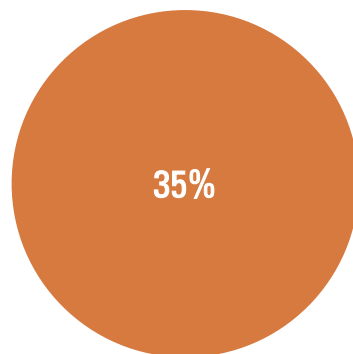
Securing debt may start to become easier

As always, the availability of funding is fundamental to the development of renewable energy, a fact which is not lost on our survey respondents who identified it as the biggest factor affecting renewable M&A activity in the next 18 months. The Eurozone crisis has heavily impacted debt financing conditions, which were only just beginning to recover from the credit crunch. 70% of survey respondents indicate that it is harder to secure debt financing to fund acquisitions of renewable energy projects and/or companies now compared to 18 months ago.

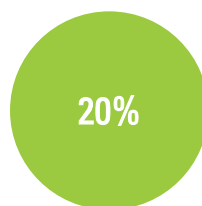
Which option best describes your experience of securing finance for acquisitions of renewable energy projects or companies now compared to 12 months ago? (Corporates and Investors)



Harder: financing is less available



Moderately harder: financing is available but the terms are more stringent



No measurable difference



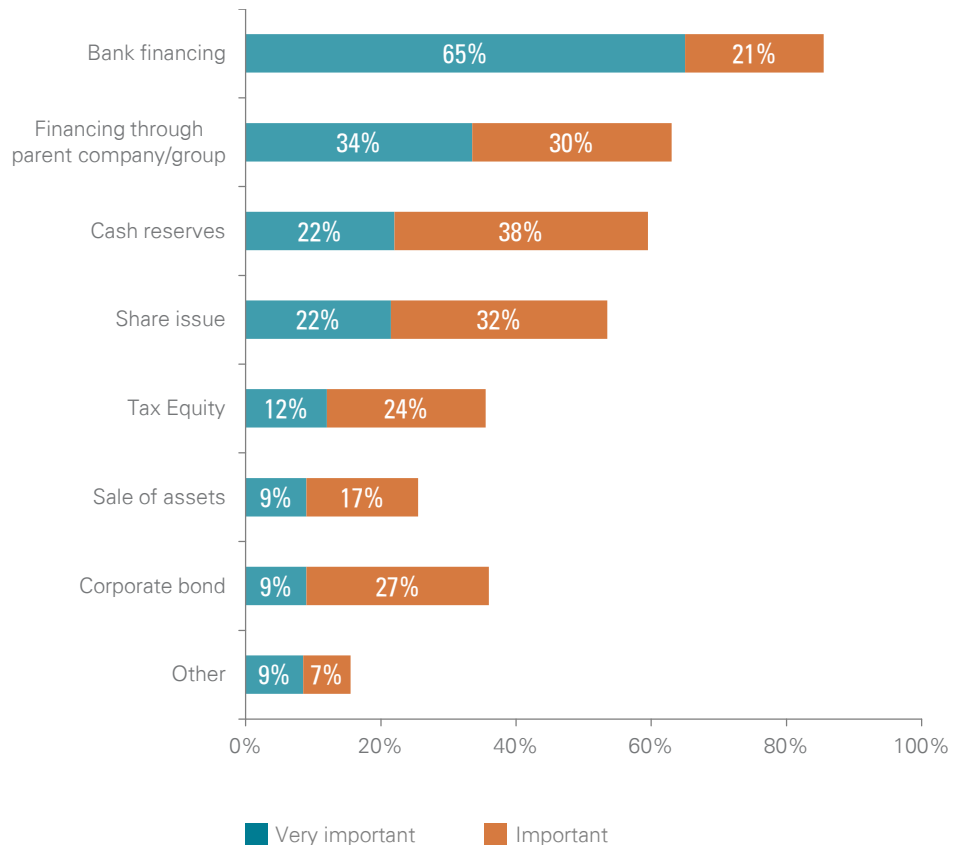
Easier: financing is available and terms are economic

86%

of survey respondents rely heavily on bank financing to fund investment

This is likely to have a significant dampening effect on M&A activity, particularly given that the majority of survey respondents rely heavily on bank financing to fund investment in, and acquisitions of, renewable energy assets. 65% of corporates surveyed deem bank financing as a very important funding source for acquisitions, significantly more than the proportion that rely heavily on financing from a parent company (34%), cash reserves (22%), share issuances (22%) and asset disposals (9%).

How important will the following funding sources be to your business when financing investment in renewable energy projects or companies over the next 18 months? (Corporates)



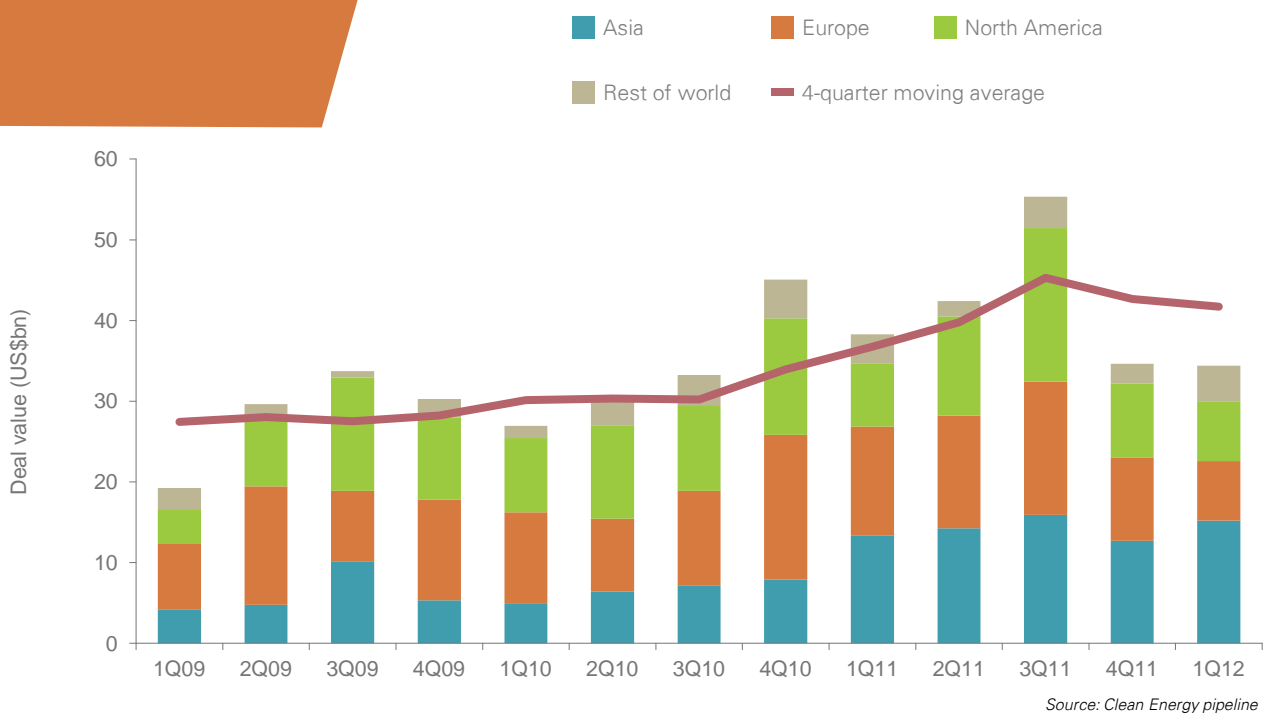
M&A activity around power generation assets is also heavily influenced by project debt financing conditions. In the short-term, developers without large balance sheets are likely to be forced to either mothball projects or to sell projects in their pipeline to larger players with better access to construction finance. Looking further ahead, M&A activity may dry up in the longer term if financing conditions remain tough over such a prolonged period of time that new-build dries up and the number of acquirable operational assets in the market decreases.

US\$69bn

was allocated to renewable energy projects globally in 4Q 2011 and 1Q 2012

Project financing has certainly dried up in response to the Eurozone crisis – only US\$69.0bn was allocated to renewable energy projects globally in 4Q 2011 and 1Q 2012, 29% below the US\$97.8bn allocated in the previous two-quarter period.

Global Project/Asset Finance for Renewables Energy Sector by quarter (1Q 2009 – 1Q 2012)



Liam O’Keeffe believes conditions are starting to improve. “What we are finding is that since the ECB intervention European banks, who have been the traditional supporters of renewable energy, suddenly seem to be a lot more liquid again,” he said. “There has certainly been a revival but it is still a difficult market, particularly for the longer dated end.”

The global dominance of European banks means that difficulties in the Eurozone in the second half of 2011 have rippled across the Atlantic. As Brad Nordholm explains, “we have seen the European investment banks withdraw quite significantly from the US, who have historically been the largest sources of project financing. On the other hand a few European banks, notably Rabobank, are stepping up their activity. We have also seen Japanese banks come into the market, such as the Bank of Mitsubishi. North American insurance companies, who have actually always been quite active in power infrastructure finance, are becoming more aggressive as well.

Project finance is certainly available for well structured mid-sized deals, particularly where the sponsor has a strong track record, although the market is a bit thinner than it was just a year ago, due to the retrenchment of European banks.”

Banks are beginning to recognise the impact of Basel III which will increase regulatory capital and require matched funding of assets and liabilities. Andy Cox notes that “the intent is for banks to demonstrate stable long term funding and remove the dependence on volatile short-term wholesale markets to provide long term lending. It is still early days for banks to adapt to the changes proposed but it is likely to result in higher cost of debt and importantly reduced appetite for long term lending. The practical implication for sponsors will not just be an increased cost of capital but also a need to take refinancing risk for long term assets”.

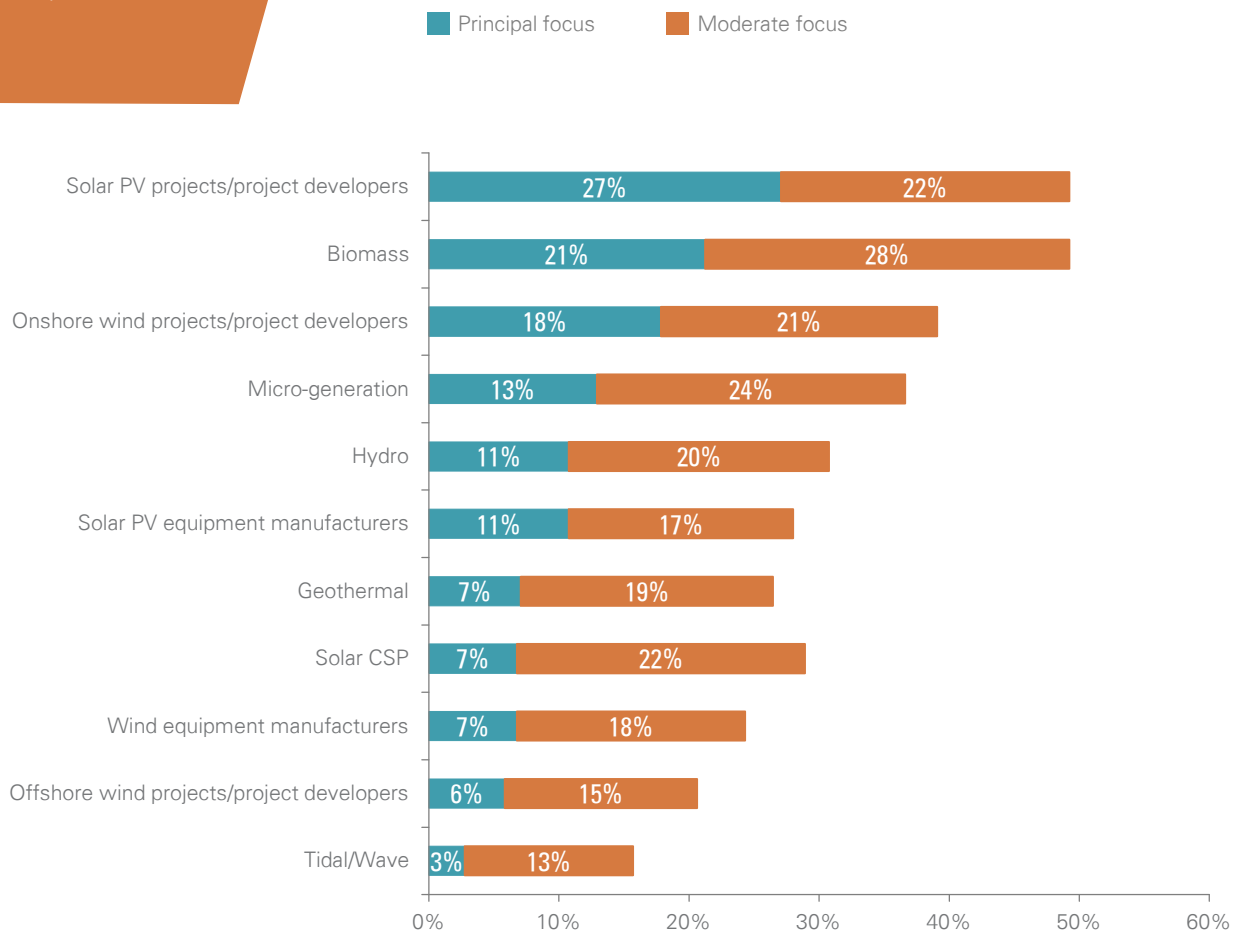
Sectors in focus

Solar and biomass are top of the agenda

As with last year, survey respondents selected solar PV and biomass as their preferred sectors for acquisitions, although there has been a swapping of places, as solar PV jumps to the top spot in 2012. Significant decreases in solar PV generating costs, an abundance of recent installations, and ever increasing confidence in the technology are all factors drawing the attention of corporates and investors alike - 49% plan to acquire in the solar PV sector this year, compared with 39% in 2011.

While falling prices of solar PV equipment have significantly increased the attractiveness of power assets with a development element, it has had disastrous effects on the supply chain. As outlined in the 'Solar PV: supply chain feels the heat' section of this report, many major European and US solar PV equipment manufacturers are struggling to survive in the face of subsidy cuts in Europe and overcapacity in Asia. Only 28% of corporates and investors currently intend to acquire solar PV equipment manufacturers, compared with 38% last year.

To what extent are you targeting acquisitions of renewable energy projects or companies in the following sectors? (Corporates and Investors)



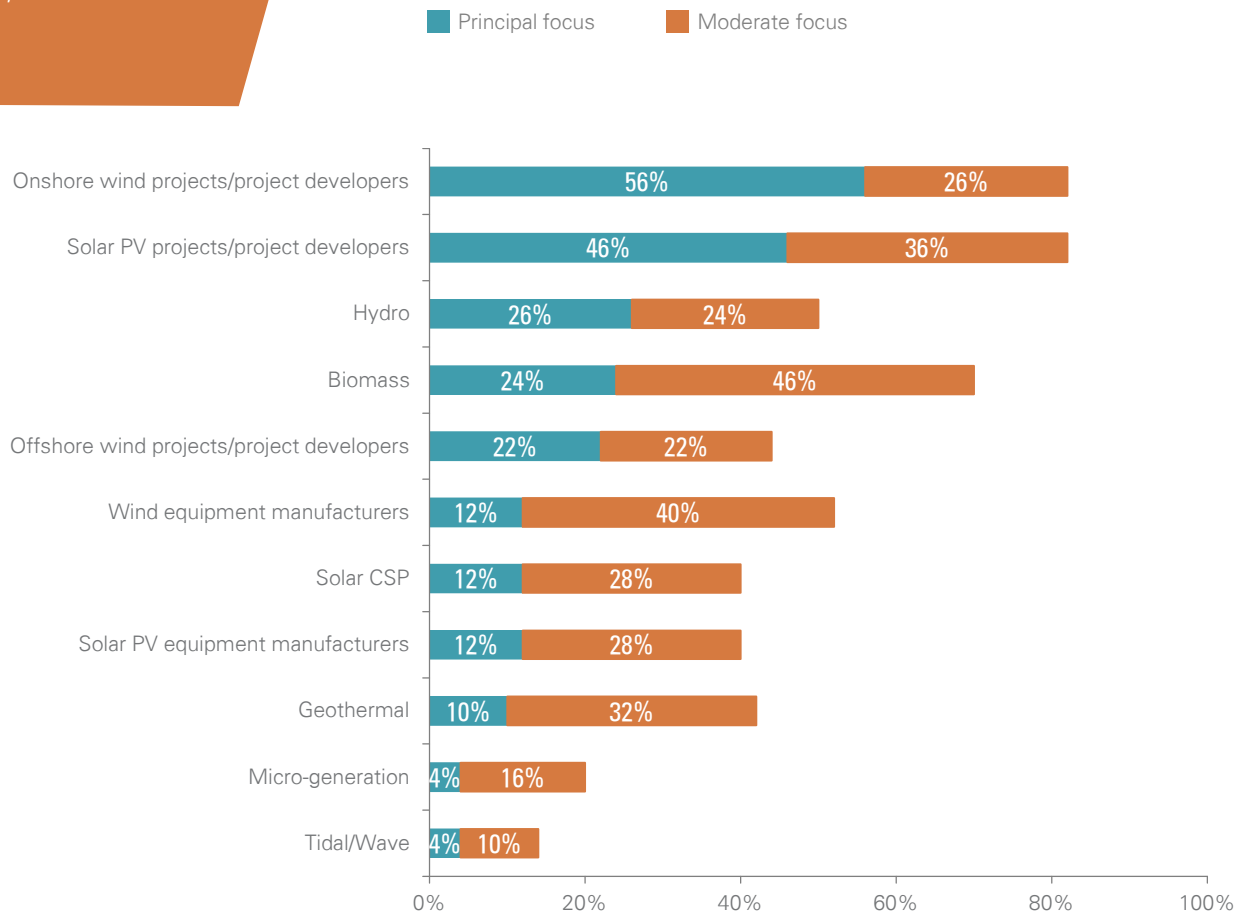
“Generally solar PV and onshore wind are quite well understood now and banks are quite comfortable with most of the risks.

Liam O’Keeffe, Credit Agricole

Biomass slipped to second place in 2012, although the sector is still targeted by 49% of corporates and investors, slightly ahead of last year (46%). Survey data suggests that lenders are becoming increasingly comfortable with financing biomass plants. Over 70% of debt providers plan to allocate capital to the sector, a significant increase on last year (44%). Importantly, banks are finding ways of mitigating risks associated with feedstock prices and operational performance, issues that have plagued the sector in the past. Nonetheless, biomass is still not as attractive from a lending standpoint as onshore wind or solar. Over 80% of banks intend to finance onshore wind and solar PV power projects during the next 18 months.

“Generally solar PV and onshore wind are quite well understood now and banks are quite comfortable with most of the risks,” confirms Liam O’Keeffe. “There is a reasonable track record and banks know what to look out for. Providing that the equipment is sourced from a reputable supplier, banks are fairly comfortable in lending to these sectors. Obviously there are still questions about subsidies, but leaving that aside, banks are prepared to invest for 18-20 years.”

To what extent are you targeting financing renewable energy projects or companies in the following sectors? (Debt Providers)



Solar PV: supply chain feels the heat

There was major upheaval in the solar supply chain in 2011. Overcapacity in Asia coupled with an adverse financing environment and subsidy uncertainty in major European solar energy markets resulted in a slump in demand and average selling prices.

As Arturo Herrero, CMO at JinkoSolar, explains: “2011 saw a dramatic reduction in ASPs for solar PV modules. Only vertically integrated manufacturers were able to absorb this. Very few of the major companies managed to generate a profit in 2011. We are seeing the bottom of ASPs right now and there is not much room for them to go down any further. We are at the level of Eur0.60- Eur0.64 per watt for a solar PV module, which is a 50% reduction from the beginning of last year.”

There have been many victims. US-based solar manufacturers Solyndra and Evergreen filed for bankruptcy in 2011. Other major US and German manufacturers such as First Solar and Conergy have seen their share prices plummet due to a series of bad news stories which show no sign of coming to an end - in April 2012, First Solar announced a 30% reduction in its workforce and a closure of its Germany factory. Mike Ahearn, First Solar’s Chairman and interim Chief Executive stated at the time of the cuts that “the European market has deteriorated to the extent that our operations there are no longer sustainable”. In light of this it is hardly surprising that appetite to acquire in the solar PV supply chain is limited. The availability of distressed assets coming to market was seen as the greatest driver of M&A activity in the next 18 months by only 9% of survey respondents, less popular than the availability of good quality assets coming to market.

A number of struggling solar PV manufacturers are simply expected to go bust before they are acquired. “The words that we would choose are liquidation and capitulation rather than consolidation,” stated Andrew Beebe, Chief Commercial Officer of Suntech. “But there will be some consolidation for sure. At the tail end of this nightmare

lull in the industry there will be some consolidation as people start to see light at the end of the tunnel and demand picking back up. But large scale consolidation is going to be about capacity and I’m really not convinced that there are many circumstances where manufacturers will need to build more in house capacity. There may be some very selective and strategic M&A around specific technology but not much beyond that.”

“What is more likely is that there will be some liquidations. We have plenty of opportunities in China to pick up massive amounts of equipment at very low prices. That is more equipment pruning than an actual merge. That is a very common trend right now and may become more prevalent. Other companies will just go off the rails entirely.”

On a more positive note, rapid cost reductions are rendering solar PV power generating assets more competitive and as such more attractive from an M&A perspective. Almost half of corporate and investor survey respondents are currently seeking to acquire into the solar PV power generation sector, up 10% from last year. In Europe, solar feed-in tariff cuts for new build projects are negating cost reductions but the supportive regulatory environment in the US is rendering solar PV assets very attractive.

“35 states have introduced renewable portfolio standards, some of which specify not just renewable but solar targets,” explains Brad Nordholm. “That’s certainly true in California. We are also seeing a rapid decrease in prices. A couple of years ago solar PPA prices were in the 14-16 dollar cents per KWh for a 20-year contract. Now we are seeing pricing in the region of 7.5-9 dollar cents per KWh. So there has been a very rapid drop in prices, not just in terms of the module, but also in terms of the price that energy is delivered in the grid, which is after all what really counts”.

“2011 saw a dramatic reduction in ASPs for solar PV modules. Very few of the major companies managed to generate a profit in 2011.

Arturo Herrero, JinkoSolar Holding Co

8%

Biomass M&A deals accounted for a relatively modest 8% of the total value of all renewable energy activity in 2011

Biomass: continues to charm despite feedstock concerns

Biomass continues to be a highly attractive sector for acquisitions. Deal activity is certainly gaining momentum - over 60 M&A deals totalling US\$4.3bn were announced in 2011, a significant increase on the 48 deals totalling US\$1.6bn announced during the previous year. However, biomass M&A deals only accounted for a relatively modest 8% of the total value of all renewable energy activity in 2011.

Biomass assets offer significant advantages over wind and solar because they offer a predictable baseload power supply. However, historically many investors have bypassed the sector due to concerns over feedstock price volatility and operational performance of plants. These concerns are still very much at the forefront of investors' minds but dealmakers are now finding ways to structure transactions to minimise exposure to these risks.

"The two biomass projects we invested in last year had some very unique structural features that addressed concerns about feedstock and price risk that you often have with biomass projects," explained Brad Nordholm, whose company has completed some of the largest biomass M&A transactions in recent months. **"With biomass you really have to have an unusually solid feedstock plan."**

Concerns over feedstock shortages may result in M&A and financing activity being centred around projects with large equity sponsors that are capable of dealing with such issues. **"Banks' appetite to invest in this sector depends on who the sponsor is and the source of the biomass,"** explains Liam O'Keeffe, **"Historically there have been a number of problems with biomass, but they tended to be with small projects with small sponsors that didn't have the technical resources to sort out these problems. I think banks can get comfortable when you are working with a solid sponsor with a good track record."**

Ian Mays is confident on the prospects for biomass and thinks it has an important role to play in the renewable energy supplies of countries going forward, but agrees that the feedstock is fundamental. **"We do have to recognise that the practical resource base is generally lower than wind and solar, but nevertheless it is an important component in a diversified energy system which includes renewables. We are developing biomass plants in the UK at the moment and hope to do so in other countries across the world."**

Our survey suggests that RES will not be alone in searching for biomass opportunities.

Onshore wind: an increasingly mainstream investment choice

The onshore wind sector is currently undergoing a heavy period of consolidation. Some 227 M&A deals totalling US\$25.2bn were announced in 2011, a significant increase on the 203 deals totalling US\$12bn in 2010. In 2012, activity shows no signs of cooling off. Almost 40% of corporate and investor survey respondents are currently planning to acquire in the onshore wind power supply chain, up from 30% last year.

A number of factors are driving this growth. In Europe, many major utilities are seeking to divest onshore wind power projects to free up capital for other development initiatives, such as offshore wind. Many financial investors seeking long-term stable returns are emerging as natural acquirers of these assets. The assets themselves are also becoming more attractive as onshore wind power generation continues to become more cost efficient thanks to technological innovation and lower cost turbines imported from China.

In the US, one major cloud is looming in the form of the potential expiry of the US wind energy production tax credit (PTC), which offers investors in wind energy projects lucrative tax breaks. The programme is due to expire at the end of the year and fierce negotiations are currently taking place in Congress over its renewal. Even if it is renewed, 2013 is shaping up to be a very weak year for onshore wind installation in the US, as very few projects that may come online after the PTC expiry date are currently being planned (see US section for detailed analysis).

In terms of M&A, this lull in the US may spur activity as many companies in the supply chain as well as developers look to sell rather than try to survive during a protracted period of weak demand. As Tristan Grimbert, explains: **“There is a chance that the PTC will be renewed but very late in the development cycle. The timing of the renewal is critical as wind turbine manufacturing starts about a year before delivery. Therefore unless it is renewed in the very near future, we will continue to see layoffs and consolidation in the supply chain. With every month that passes without PTC certainty the supply chain is hurt more. If the PTC is not renewed then we expect virtually no new wind projects to be built.”**



Almost **40%**
of corporate and investor survey
respondents are currently planning to
acquire in the onshore wind power supply
chain

Almost **45%**

of debt provider respondents plan to finance offshore wind projects

Offshore wind: financial investors still at sea

The sheer scale of offshore wind projects means that investment and M&A activity will largely be limited to the major utilities, strategic investors such as the Japanese trading houses and larger direct financial investors, such as pension funds and life insurance companies. Many private equity and infrastructure fund managers are not able to demonstrate the right risk reward profile to their investment committees to push the button on offshore wind M&A. Given the implicit barriers to entry, it is unsurprising that only 21% of corporate and investor respondents intend to acquire in this space, approximately half the number that are seeking onshore wind power assets. While a small number of financial investors have invested in offshore wind projects in recent years, such activity is rare, and tends to involve complex acquisition structures.

Ultimately it is critical that a solution to this financing issue is identified. The UK alone has set a target to install 18GW of offshore wind capacity by 2020, which may require in excess of £50bn of project capital.

“The size of offshore wind farms that utilities are looking at is increasing and utilities simply cannot afford to be doing this on their own,” explained Peter Wesslau. **“Thanet used to be the biggest offshore wind farm in the world. But each of the projects we are planning to do off the coast of East Anglia in our UK Round 3 joint venture with ScottishPower Renewables is almost four times as big and will require very significant capital investment. The industry needs to be able to tap into a deeper pool of cash but at the moment it is too nascent. The onus is on the industry to evolve and to take the next steps.”**

An alternative onus is on the financial investors to reconsider their return expectations given the ongoing low interest rates available elsewhere and the volatility of equity markets.

Banks appear to be better understanding the risks around offshore wind, despite the adverse macroeconomic climate.

Almost 45% of debt provider respondents plan to finance offshore wind projects, more than the proportion that are planning to finance geothermal (42%), solar CSP (40%) or tidal and wave projects (14%).

Liam O’Keeffe believes that banks have the necessary capacity to finance offshore wind projects: **“We estimate that there are about 40 banks active in arranging and lending to renewable energy projects generally, of which about 20 will lend to offshore wind with a degree of construction risk. That’s enough to get reasonably sized projects financed. The Lincs offshore wind farm a UK Round 2 project recently negotiated financing on surprisingly favourable terms given where the market was.”**

A high level indicative calculation by O’Keeffe indicates **“that there is about Eur750m of capacity per project, assuming you have good quality sponsors and contractors and that the risk is being carefully managed. Offshore wind needs to be carefully structured with a lot more equity than a normal renewable energy project. As long as these factors are met then there is certainly liquidity, up to about Eur750m per project.”**

One area in which there may be potential for consolidation is the offshore wind supply chain. The real ramp-up in offshore wind installation is expected to take place in approximately three years, when 32 GW of projects outlined in the UK’s Round 3 tender move towards contracting stages. Many companies operating in adjacent sectors, such as oil and gas, will likely be eyeing this market for potential entry routes.

Any consolidation that does take place will likely be focused on companies providing installation and maintenance services, demand for which looks set to grow exponentially in the coming years. The acquisition announced in March 2012 of UK offshore wind turbine and foundation maintenance specialist SeaJacks International by Marubeni Corp and Innovation Network Corporation of Japan could well be an indication of what the future holds.

Solar thermal: targeting new markets

Solar thermal has often been viewed as the holy grail of renewable energy power generation. The ability of concentrating solar power (CSP) technology to integrate energy storage capabilities with power producing plants provided many in the industry with the belief that CSP would become continuous power source, something that is simply impossible with intermittent renewable energy technologies such as solar PV and onshore wind.

However, solar CSP costs have been unable to match the significant cost reductions in solar PV during the past year, which has resulted in the technology suffering setbacks in some markets. The most obvious example was when Solar Millennium AG, one of the world's largest developers of solar CSP projects, announced in August 2011 that it intended to deploy solar PV technology instead of CSP technology at its flagship 1 GW Blythe solar power project, situated in the Californian desert. Solar Millennium stated that it would be easier to secure financing for the project if it was developed as a solar PV facility, even though the planned CSP project had already secured a US\$2.1bn Department of Energy loan guarantee. The company has since filed for insolvency after failing to secure financing for its Ibersol CSP project.

In Spain, recent debate on how to address the country's tariff deficit have brought focus to the CSP subsidy regime, leading to uncertainty in the CSP M&A space. This follows a series of notable transactions in 2011, such as, the disposals of ACS stakes in CSP plants to RREEF, Antin, GE and KGAL.

Survey data confirms the specific circumstances of solar thermal, such as the limited countries where the technology is currently deployed and the scale of investment required. Only 7% of corporate and investor respondents worldwide cited solar CSP as their principal focus for acquisitions during the next 18 months, three quarters less than the number that are targeting the solar PV power generating sector.

Solar thermal does continue to attract interest, however. Solar Millennium's decision to halt development of its solar CSP project pipeline in the USA was driven by factors that are very specific to the US market, most notably the increasing

importance that American utilities are putting on peak power, which removes CSP's advantage as a potential base-load source. Indeed solar thermal may have a future in those markets where there is less of an emphasis on peak power. Australia, India and Morocco have separate tariffs for solar CSP and solar PV, which may spur development of both technologies. In India, Areva's announcement in April 2012 that it had won a contract from Reliance Power to supply a mammoth 250 MW CSP plant may point to the future scale, and location, of a technology which has historically been focused on the USA and Spain. It is worth noting that while survey respondents significantly prefer solar PV over solar CSP for acquisitions and investments during the next 18 months, 29% have at least a moderate focus on solar CSP, more than geothermal (26%) and offshore wind (21%).

Adrian Scholtz at KPMG is keen to emphasise the underlying attraction for infrastructure investors. **"The beauty of the technology is its scale and simplicity, implying long term steady cash yields for project owners. There is a strong supply of M&A opportunities from good quality sponsors, particularly in Spain. Unfortunately, the current uncertainty around Spanish regulation is stifling the natural recycling of capital which is essential for investment in new developments. The sooner the situation is resolved the better."**

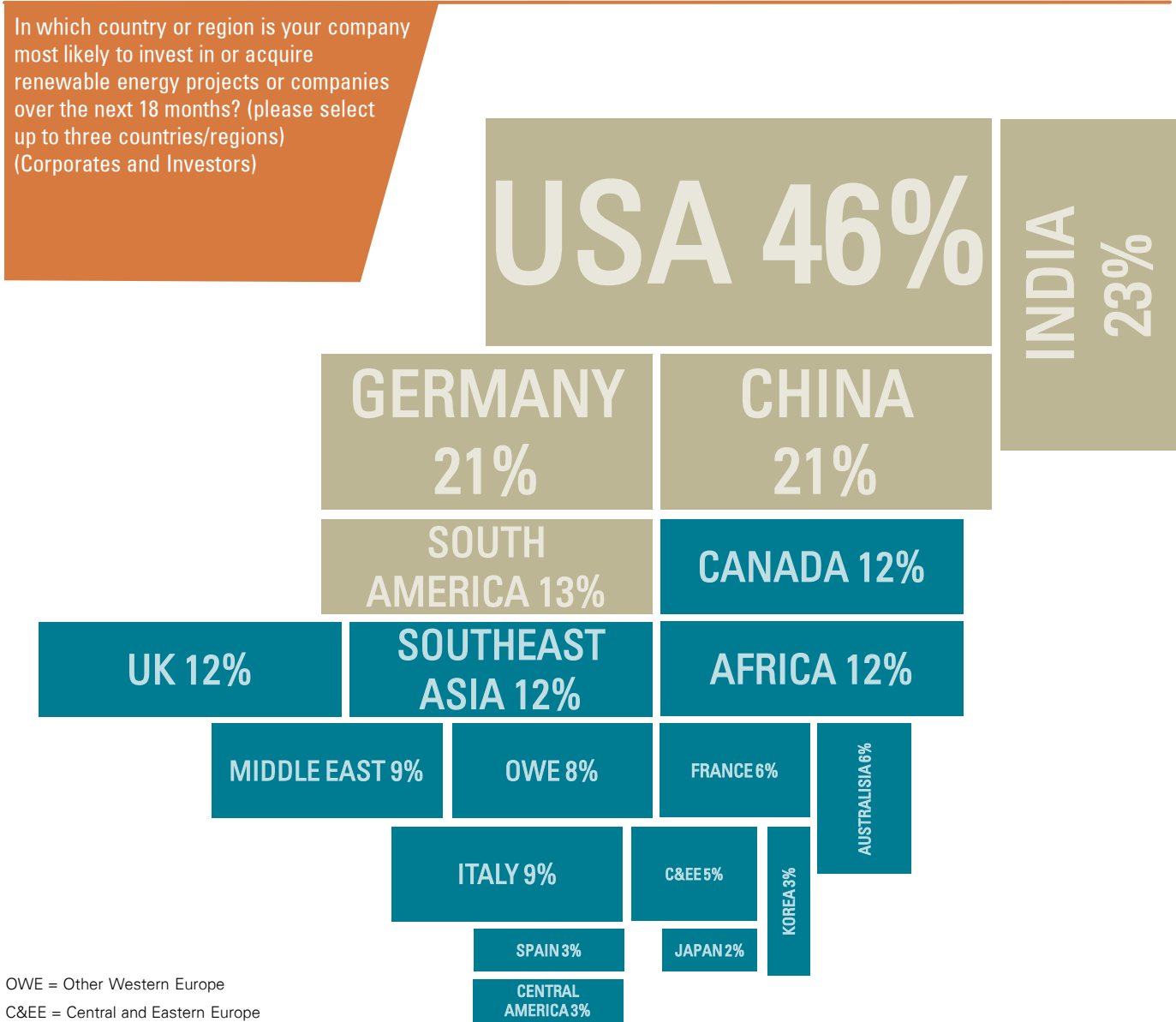
7%

of corporate and investor respondents worldwide cited solar CSP as their principal focus for acquisitions during the next 18 months



The renewables country A-list

The top five targeted countries and regions for renewable energy investment and M&A are the USA, selected by 46% of survey respondents, India (23%), China (21%), Germany (21%), and South America (13%). The main mover is South America, which has replaced the UK in the top five. It is important to note that the UK only comes in slightly behind South America, being targeted by 12% of survey respondents. The following sections provide an overview of the key factors that are drawing corporates and investors to these countries and regions.



USA: current appeal to be challenged by subsidy upheaval

For a number of reasons, the USA continues to be the most attractive market for renewable energy acquisitions and investment with approximately 46% of respondents looking stateside. Not least among these drivers is the view that the USA offers a stable investment environment and that the country seems to be weathering the global economic crisis more robustly than, for example, its European counterparts. This attractiveness is evidenced by the geographical diversity of potential investors – the USA is the third most attractive country for European investors, ahead of local markets such as Italy, France and Spain, while Asian survey respondents plan to target the USA ahead of any other non-Asian market. The US also attracts participants from across sectors, such as French oil and gas giant Total SA's acquisition of a 60% stake in Californian solar PV manufacturer SunPower in mid-2011 (US\$1.4bn); Sharp's acquisition of solar project developer Recurrent Energy for US\$305m in late 2010; and a variety of European utilities including Iberdrola and E.ON which have acquired US assets in recent years.

If respondents use the past as a guide to future performance, then our survey reflects the acceleration in US M&A activity in 2011 - some 134 deals totalling US\$7.9bn were announced, compared with 103 totalling US\$6bn announced in 2010. And headline deal indicators for early 2012 have certainly been positive - Algonquin Power and Utilities landmark acquisition of Gamesa's American onshore wind portfolio for US\$0.9bn announced in February may actually be surpassed by the rumoured sale of AES's wind portfolio to State Grid of China for an estimated US\$1.7bn should this complete. Hiroshi Sakuma is not alone when identifying that his company **"will continue to invest in the US"**, although his company has a strategy of seeking **"developers who have projects at an advanced development stage, but who are experiencing difficulties funding the remainder of the development"**.

However, while the headline figure of 46% planning to target the USA is certainly impressive, this does not tell the whole story. In fact, the response level represents a marked decline on the 2011 equivalent of over 50%, a decline which we believe is largely driven by political uncertainty and a series of blows to the regulatory environment:

- The 1705 US loan guarantee program, which was essential in ensuring financing for some of the largest renewable energy projects in the US last year, expired in September 2011;
- The deadline for breaking ground on new projects under the 1603 cash grant program, which provides renewable energy project developers a cash grant in lieu of tax credits, expired three months later; and
- The wind energy Production Tax Credit ("PTC") is set to expire at the end of 2012.

President Obama's budget for the 2013 fiscal year proposes the return of the 1603 cash grant for renewable energy projects, but this is unlikely to be approved before the Presidential elections. In fact, the regulatory uncertainty caused by the 2012 Presidential elections already seems to be impacting investor confidence and buffeting M&A activity. Damian Darragh concurs: **"there is a lot of uncertainty around regulation in the US, which inevitably gets tied up around the Presidential election. I think everyone in that market will be living with some uncertainty until you see the outcome of the election."**

The key concern of most stakeholders, at least in the wind sector, is whether the PTC will be extended. The PTC is seen as the key mechanism that makes wind projects economically viable – if it is not renewed, or even if it is extended at the end of the year, the impact is a mothballing of wind projects that cannot be guaranteed to be in place by the end of 2012. Mike Garland, CEO of Pattern Energy believes that the reduction in projects in 2013 if there is no PTC renewal in 2012 will be **"catastrophic"**, with a knock on effect on turbine and components manufacturers. Our survey respondents confirm how important this one policy item is – over 80% either agree or strongly agree that the extension of the PTC for wind beyond 2012 is critical to their investment decision in the US market. Market participants however, remain optimistic: Hiroshi Sakuma believes that **"the PTC will probably come back after the election as it will be essential if US utilities are to meet their RPS requirements and to enable renewable energy to compete with natural gas."**

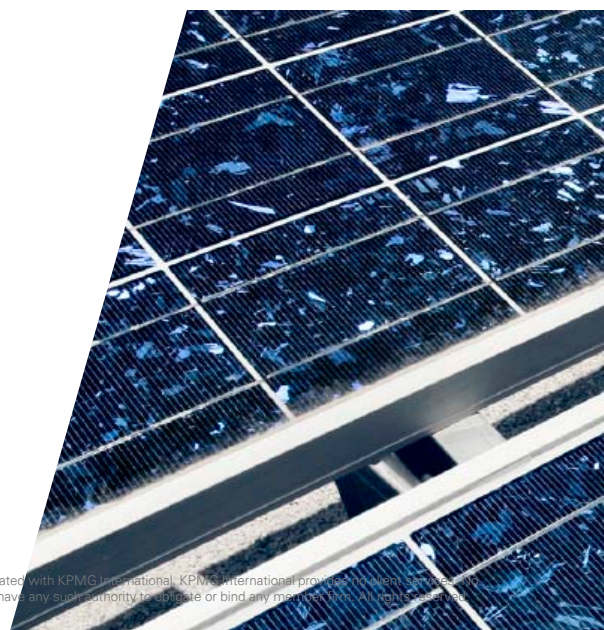
Market participants are generally less hopeful for the return of the 1603 cash grant program. One of the main implications of the expiry of the cash grant is that it will place greater emphasis on tax equity financing. Historically, large financial institutions such as banks and insurance companies have been the major US tax equity investors. Their appetite decreased significantly in the period 2008-2011 following the financial crisis, as some of the largest tax equity investors, such as Lehman Brothers, ceased to exist, and others simply had less tax liabilities to offset. There are signs that the tax equity market is returning, albeit in a slightly different form to before, as non-financial household names begin to look at a tax equity investment in renewable energy for the first time. For example, in early 2012 Chevron announced plans to invest tax equity in solar PV power plants in the 3-20 MW range in the coming years. The financial players continue to be active too: the North American division of Enel Green Power Spa finalised a tax partnership agreement for around US\$340m with a consortium led by JP Morgan, Wells Fargo and MetLife in January 2012 while financial services company TIAA-CREF and Cook Inlet Region closed a US\$400m tax equity financing for two wind farms totalling 140 MW in February 2012. No-one is under the illusion though that tax equity alone will provide sufficient capital to replace the grants schemes. **“There is definitely appetite for tax equity at the moment although it is certainly not as deep and not as large as it was before the financial crisis,”** confirms Brad Nordholm, **“So it is effectively going to the strongest projects with the strongest sponsors, which is not necessarily a bad thing.”**

All this regulatory uncertainty is not necessarily detrimental to M&A activity. 2013 is looking to be a tough year for USA developers, and according to Tristan Grimbert, **“not all developers will be able to sustain the drought”**, leading to consolidation on the developer side. He believes that there will also be consolidation on the equipment manufacturer side as the supply chain struggles with the impact of the PTC uncertainty, an impact exacerbated by supply chain lead

times. From a utility perspective, a shift is occurring as utilities increasingly prefer to enter into PPAs rather than actually owning renewable assets; but Grimbert believes that this is a **“short term trend”** only and that in the future there will once again **“be a mixture between owning assets and entering into PPAs”**, which will of course impact the M&A market.

One sector that looks set for expansion is US solar, which has different dynamics to the wind market. Rapidly falling module costs are rendering projects increasingly attractive to financial investors and acquirers, while the investment tax credit for solar PV is not due to expire until the end of 2016, providing investors with a strong degree of regulatory certainty. Arturo Herrero expects the US to be one of the markets where demand for solar grows the most.

“I think everyone in the US market will be living with some uncertainty until you see the outcome of the election.”
Damian Darragh, Terra Firma



17%

of the US\$393m worth of Indian M&A deals announced in 2011 involved acquirers outside of India

India: outside investors should target local partners to facilitate market entry

Almost a quarter of survey respondents worldwide plan to invest and acquire in India during the next 18 months, making it the second most highly targeted country globally behind the USA. Perhaps this should come as no surprise. India is targeting some mind blowing investment levels in infrastructure – an estimated US\$1,018bn in the 12th five year plan 2012-17 alone, of which we estimate US\$310bn is targeted at the energy sector. The Indian renewable energy sector itself has massive potential. The country's vast renewable energy resource and burgeoning power demand are supplemented with a plethora of attractive government incentives, which include generation based incentives, renewable purchase obligations, and grid based incentives. Tax incentives that provide developers with 80% accelerated depreciation on capital deployed in renewable energy in their first year of operation have been withdrawn in the current budget, but tax holidays available to power projects have been extended by one year and are applicable to projects which commence generation before 31 march 2013. These subsidies are supported by overarching national renewable energy development programmes, such as the National Solar Mission, which aims to have installed a cumulative 68 GW of solar capacity across the country by 2022.

Some US\$7.6bn of project financing flowed into Indian renewable energy assets in 2011, more than double the US\$3.1bn invested in 2010. This growth shows no sign of abating. Investors with some experience of working in India have however stated that the market's demonstrable potential can be offset by limited opportunities for outside investors due to the dominance of local actors and a culture that pushes for local EPC firms, equipment and capital where

possible. In particular, the Indian project finance market is often seen as incredibly competitive, and to an extent dominated by local banks such as the State Bank of India. The financing market is certainly very well established which can make it very difficult for external financiers to compete. However, there have recently been instances of long term foreign financing in the sector being more competitive. The recent round of increases to interest rates in the Indian market may lead to this trend increasing.

M&A activity is currently strongest in the wind, and hydro sectors. Activity in the solar sector, which initially attracted a lot of interest, has been somewhat dampened by the impact of highly competitive bidding in the recent round of auctions, putting a question mark over the level of returns realistically achievable. That being said, the sharp decline in prices of inverters and modules, in conjunction with competitive financing terms that can often be obtained, may still allow for attractive returns going forward.

There is increasing evidence of large European and US energy groups looking at India for acquisitions given the growth potential, double digit returns profile and the fact that their local markets are often perceived as saturated. Currently though, M&A activity does have a certain domestic feel. Only 17% of the US\$393m worth of M&A deals announced in 2011 involved acquirers outside of India, while only 12% involved acquirers outside of the Asia-Pacific region. Arturo Herrero believes that the **"need for local partners makes the market a little more challenging"**, although this should not detract from the development potential of the market. Private Equity players, including some of the large global funds, have recognised the development potential and are now actively providing growth capital to Indian renewable energy players.



China: still a difficult market to penetrate for non-Chinese?

Appetite to acquire in China is global. Approximately one quarter of North American survey respondents plan to acquire and invest in China, more than the number that are seeking to make acquisitions in any European country. In parallel European respondents appear much more willing to invest in China (12%) than they do in other non-European markets such as South America (8%) and Southeast Asia (3%).

However like India, transaction data suggests that it can sometimes be difficult for outside investors to enter China. Only 11% of the US\$2.1bn worth of M&A activity in China during 2011 involved a non-Chinese acquirer. Our survey respondents back up this view: 46% of respondents believe that the major Asian markets are a closed shop to external investors.

China's emphasis on sustainability, energy conservation and clean energy in its recent five year plans has resulted in massive growth within its wind energy sector in recent years. In 2010 China surpassed the USA to become the world's largest wind energy market after installing 18.9 GW. In 2011 it installed a further 17.6 GW, cementing its position as the world's leading wind energy market.

Prospects are more challenging this year. A series of power outages in 2011, turbine manufacturing overcapacity and the fact that large amounts of constructed wind capacity remain unconnected to the grid resulted in central Government taking control over approval of projects smaller than 50 MW last year. Previously these had been managed by local authorities. This is likely to start to have a material impact on new installation in 2012 and beyond. Furthermore, these changes have been made in the context of the implementation of China's twelfth five year plan (2011-2015), which calls for a deceleration of new wind energy installation following a period of rapid growth and greater focus on project quality and capacity utilisation.

It is perhaps for this reason above all that China slipped one place down the rankings this year and is now the third most attractive country for investments and acquisitions (selected by 21% of survey respondents).

From a sector perspective, the country's solar sector looks set to exhibit substantial growth in the coming years following the introduction of a nationwide feed-in tariff. China is targeting the installation of 15 GW of solar capacity by 2015, a target it increased from 10% in 2011.

European respondents appear much more willing to invest in China than they do in other non-European markets

Europe: Germany still concentrating investors' minds

For the second year running Germany is the most frequently targeted European country for renewable energy acquisitions and investment – 21% of corporate and investor respondents worldwide plan to target Germany over the next 18 months, significantly more than the proportion targeting the UK (12%), Italy (9%), France (6%) and Spain (3%).

While Germany has implemented a series of subsidy cuts in recent months, they have been communicated to the market in a highly transparent manner. As a result M&A activity has remained buoyant - some 64 M&A deals totalling US\$3.7bn were announced in 2011, compared with 79 deals totalling US\$3.6bn in 2010.

Looking at individual sectors, M&A activity and new installations in solar may take a hit once the 30% solar PV feed-in tariff cut in July takes effect. **"This year Germany will still be large but not the fastest growing market,"** is the view held by Andrew Beebe, **"It will also likely be at grid parity in the second half of this year. There is very little feed-in tariff benefit starting in July and yet we will see projects getting financed. That is a very exciting transition for the industry and for the world to watch as it is a harbinger of what is coming."**

One large potential growth area is offshore wind, which the Government has prioritised as its replacement for nuclear. It plans to install 10 GW of offshore wind capacity by 2020, which represents a quantum leap on the c.200 MW installed at the end of 2011. M&A in this sector is likely to be dominated by large utilities divesting stakes in pre-construction and under construction offshore wind farms to recycle capital and syndicate risk.

66% of respondents believe that the Eurozone crisis is adversely impacting the M&A market and this is borne out by those with experience of the market. Particularly affected is Spain, where mooted proposals on retroactive tariff reductions to CSP (in addition to those previously experienced in solar PV) have dampened investor confidence. Retroactive cuts are certainly a bugbear of future investors – 76% cite even the possibility of these as impacting their confidence in the sector as a whole. A hiatus in dealflow is perhaps what we can expect to see in Southern Mediterranean renewable M&A markets in the next 18 months. A key question for investors is the extent to which this uncertainty will spread to other markets such as France, Benelux, the UK and even Germany.

21%

of corporate and investor respondents worldwide plan to target Germany over the next 18 months

Emerging markets: the renewable growth drivers

Emerging markets have become significantly more attractive to corporates and investors globally during the past twelve months. South America enters the top five list of targeted regions for the first time this year, being targeted by 13% of corporates and investors globally. Meanwhile Africa and Southeast Asia are now considered as attractive as the UK, with each securing 12% of corporate and investor survey respondents respectively in this year's survey.

In many emerging markets the desire for renewable energy is being underpinned by a rapidly growing demand for energy. Indeed 52% of survey respondents seeking to invest in Central America cited market demand as their primary motive, which is at a similar level to responses concerning South America and India.

In certain emerging markets renewable energy development has also been supported by large-scale government tenders and the establishment of lucrative incentive mechanisms. For example, Brazil's wind energy sector has experienced rapid growth in recent years as a result of multiple project tenders. The country's state plan calls for 12 GW of wind energy capacity to be brought online by 2020, significantly more than the 1.5 GW that was operational at the end of 2011. Chile and Uruguay have also launched sizeable wind energy tenders. Arturo Herrero explains why these markets are popular: **"South American countries such as Brazil, Chile, Mexico and Argentina will also grow very fast. Incentives have been approved here in recent months, which are well structured and very clear. There is also a lack of energy so renewable energy is a great way of meeting rising power demands that cannot be met with normal electricity sources"**.

Transaction data highlights the growing attractiveness of South America. Some 26 M&A deals totalling US\$4.8bn were announced in 2011, a massive increase on the US\$480m worth of deals announced in 2010. This trend has not changed in early 2012. Brazilian renewable energy power producer CPFL Energias Renovaveis SA acquired four wind farms totalling 158 MW for US\$351m in February 2012, while a consortium of acquirers including Enerplan, a subsidiary of Brazilian biofuel and vegetable oil firm Oleoplan, acquired 137 MW worth of Brazilian wind capacity for US\$301m in March

2012. Mike Garland, whose company has been investing in Chile as a foothold in Latin America and is now looking at Brazil, expects the trend to continue: **"Development in Latin America will be a combination of international developers and local utilities. Over time there will be some consolidation of generators who want to have renewables. It's not a massive electricity market but an exciting one. There will certainly be consolidation for efficiency reasons."**

The first phase of South Africa's renewable energy tender, which selected developers for 1.4 GW of wind and solar capacity in late 2011, is another example of the way in which government programmes can catalyse development. The country's Integrated Resource Plan calls for 17.8 GW of renewable energy capacity, representing c.42% of energy supply, to be operational by 2030. Less than 1 GW of renewable energy capacity was operational at the end of 2011.

Emerging markets are clearly catching the attention of major developers. For example Ireland-based Mainstream Renewable Power was one of the major bidders in South Africa's recent round of tenders and has been awarded secured bidder status to develop 230 MW of wind and solar projects as a part of a consortium. Likewise Italian renewable energy group Enel Green Power expects 38% of its planned 4.5 GW of renewable energy development between now and 2016 to take place in emerging markets including Turkey, Morocco and South Africa.

In many instances renewable energy development in emerging markets has the advantage of not competing with established energy sources. Renewable energy is essentially seen as a means to satisfy demand rather than as an alternative energy source. Arguments in favour of investing in Africa over more developed industry markets can include the lack of complexity of integrating with a large grid as well as providing what can be a very efficient way for African countries to access electricity.



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