*Mergers and acquisitions activity within the global power, utilities and renewable energy market*

# **Power & Renewables Deals**
# 2016 outlook and 2015 review

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# Introduction

*Welcome to our 2016 Power and Renewables Deals outlook. It is the latest in our annual series in which we look at mergers and acquisitions activity in the power utilities sector.*

*We start the report with a look at some of the main themes that will drive deal activity in the year ahead. We come off the back of something of a landmark year. The past 12 months have seen record levels of power and renewables deal value being transacted in the Asia Pacific region. It was also a year of major growth in renewables deal value.*

*We move into 2016 with a number of headwinds affecting the wider global economic outlook but some very strong factors driving dealmaking inside the power and renewables sector. On balance we believe the upside factors outweigh the negatives and we expect to see significant power and renewables deal momentum in 2016.*

*On the following pages we highlight the key developments that are likely to characterise 2016 M&A activity in the sector worldwide, reflecting on the overall energy sector transformation. We also look at the main deal hotspots which provide particular deal opportunities as well as review who is doing what and where.*

*We conclude the report with a look at activity in the main regions of the Americas, Asia Pacific and Europe.*


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# 2016 outlook: sector momentum strong despite headwinds

*We predicted in last year's report that the surge in US gas deals that had pushed total power and renewable deal values strongly upward would abate, but there was plenty of potential elsewhere in the global power M&A pipeline. This proved to be the case in 2015, with dealmaking in the Asia Pacific region reaching a new record level and the total value of worldwide renewables deal value nearly doubling.*

Looking ahead, there are clear downside risks in the global economic environment. Although global growth is expected to edge up in the coming years, it is at a slower pace than had been envisaged. Growth forecasts are being revised downwards and there is increasing awareness of the spillover effects that could come from simultaneous slowing of four of the largest emerging markets - Brazil, Russia, China, and South Africa – as well as from wider geopolitical risks.

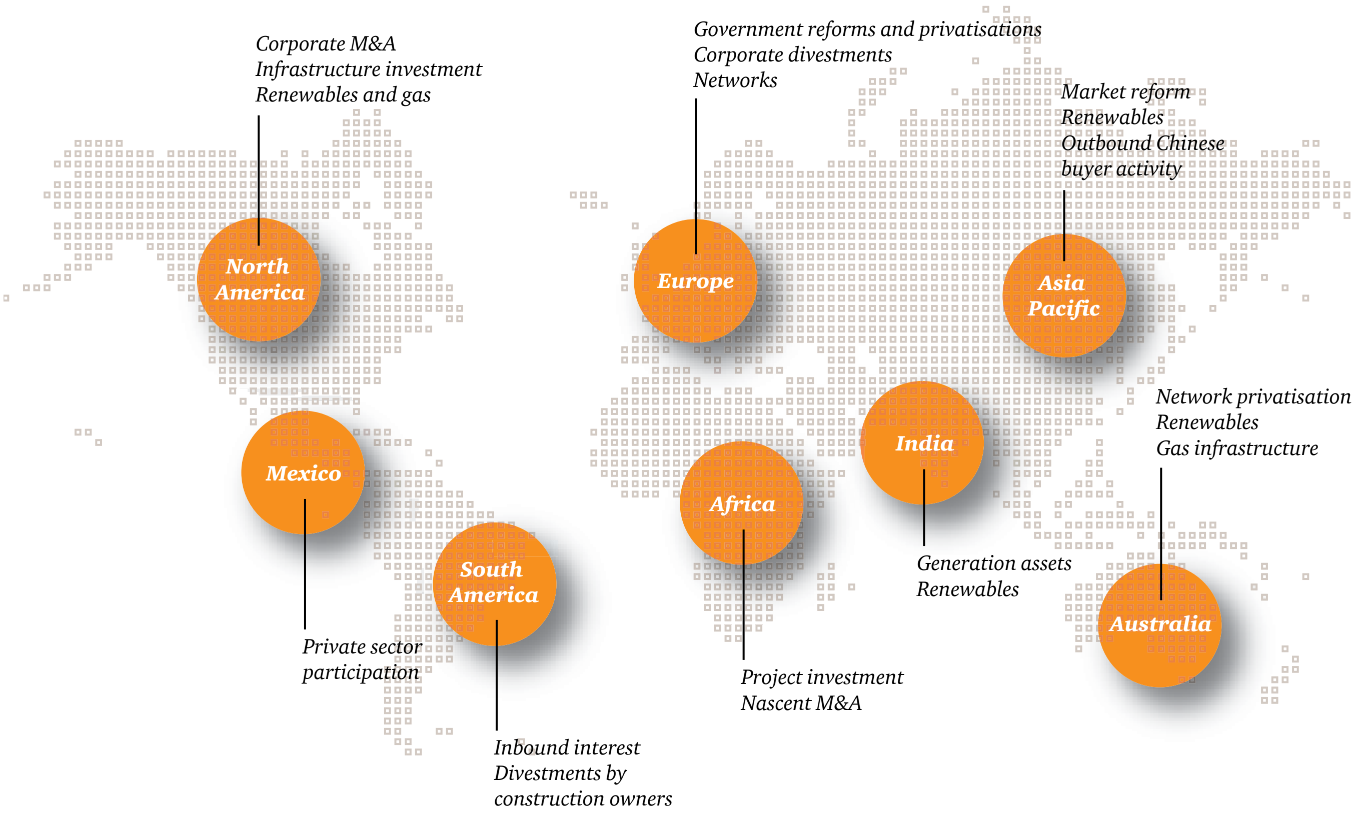
Despite this background, there are a number of strong factors driving deal activity in the power and renewables sector that we expect will lead to a significant deal flow in the year ahead. Foremost among these are continued corporate restructuring, a healthy list of expected sales in Europe, mid-cap consolidation in the US, outbound moves by Chinese companies, strong renewables deal momentum and the attractiveness to buyers of the steady returns from regulated assets in the sector. If anything, wider economic uncertainty will heighten the attractiveness of such assets.

In this section, we look at the influences on deals and specific expectations for power and renewables deal activity in the year ahead. In the later sections, we review current deal trends and the deals that have taken place in each region.

### *Corporate restructuring as companies respond to energy transformation*

In Europe, RWE is planning a transformational restructuring. During 2016 it plans to hive off its renewables, grids and retail units into a separate entity and sell a 10% stake in an initial public offering expected later in the year. The company intends to use the additional capital to enable the new subsidiary to step up its capital expenditure in renewable energy and the trends of the energy world of tomorrow. In the meantime, E.ON's restructuring is gathering pace, E.ON and Uniper began separate operations at the beginning of 2016 and Uniper's stock-market listing will take place in the second half of the year.

**Figure 1: Global deals outlook and opportunities – areas of activity**




Germany is something of a special case because of the particularly rapid growth of decentralised energy and its phasing out of nuclear power, but energy transformation-related corporate restructuring is evident elsewhere. Big utilities companies in all major markets are implementing decarbonisation strategies, with consequent shuffling of generation portfolios. Many are also continuing to look to sell assets in order to strengthen their balance sheet position.

### *Utilities continue to line up strategic partners*

Partnerships between utility companies and co-investors bring obvious benefits to both parties, contributing complementary expertise and enabling utilities to better leverage growth opportunities. Among the most notable recent moves, Gas Natural Fenosa has created Global Power Generation (GPG) to drive international growth, with a 25% share being acquired by the sovereign wealth fund Kuwait Investment Authority (KIA) through its asset manager, Wren House Infrastructure Management.

Also during 2015, we saw Enel Green Power (EGP) form a partnership with GE Energy Financial Services with the sale of a minority interest in a 760-MW portfolio of operating wind, geothermal, hydropower, and solar generation assets plus a wind farm under construction. In the Asia Pacific region, Enel Green Power has signed an agreement with Japan-based Marubeni Corporation to develop potential geothermal, wind, solar and hydro business opportunities in the Philippines, Thailand, India, Indonesia, Vietnam, Malaysia and Australia.

### *Strong US deal dynamics*

Mid-cap consolidation is becoming a strong deal theme in the US utility sector as buyers size up opportunities, particularly in the local distribution company markets. There is the opportunity on the natural gas side to deploy long-term capital into these platforms, with premiums being justified not just by synergies but by rate base growth opportunities. The shift to cleaner power and the move away from coal implies a long-term shift from a historic 40-50% dispatch share for natural gas in the US to around 75%, resulting in significant deal interest in gas assets.

## *At a glance*

- *US$199bn worldwide power and renewables 2015 deal value, down 16% year on year.*
- *Record highs for worldwide renewables deal value and Asia Pacific sector-wide deal value.*
- *Renewables deal value has nearly doubled in Europe and more than doubled in Asia Pacific. It is up between a quarter and a third in North America and up nearly threefold in Central and South America.*
- *Upside factors outweigh negatives in our 2016 outlook.*
- *Strong reasons to expect significant deal flow in the year ahead.*

On the electricity transmission side, bidders are lining up for a possible sale of ITC Holdings, the largest independent electricity transmission operator in the US, after the company announced in late 2015 that it was commencing a review of strategic alternatives. Restocks and portfolios are being actively reviewed, particularly in the PJM market, where new capacity performance rules are prompting rethinks. It is possible that this might lead to some deal activity for independent power producer (IPP) assets.

### *Bumper year beckons for Europe*

A buoyant deal flow is anticipated in Europe, with a good chance of a number of big deals getting underway during 2016. In the UK, National Grid is examining options for the disposal of a majority stake in its gas distribution business, which would be likely to attract considerable interest from a range of infrastructure and institutional funds. Similarly intense competition is likely to arise from OMV's planned sale of up to a 49% minority stake in Gas Connect Austria (GCA), a company that operates and constructs natural gas high-pressure pipelines in Austria. The UK government is planning the sale of its Green Investment Bank, which could also be of interest to infrastructure buyers.

Elsewhere, Macquarie is reported to be preparing the sale of German gas grid Thyssengas, and Belgian company Eandis is selling a minority position in its networks. In France, negotiations around the future of Areva are likely to include the sale of its nuclear reactor business to EDF. French company EDF is reported to be considering a disposal plan that could encompass up to US$10bn-worth of assets over five years. Also there are ongoing negotiations around the future of Areva. More generally, most of the big utilities in Europe continue to actively consider disposals in order to optimise their balance sheets and this is likely to be a source of deals in 2016.

### *Asset structure concerns will influence deals*

Concerns about the yieldco structures for renewables assets and the performance of oil and gas pipeline master limited partnerships (MLPs) during a prolonged period of low commodity prices will be a factor in dealmaking in 2016. In the US, some of the most prominent renewables yieldcos fell firmly groundward in the second half of 2015 following their earlier boom. Whether they can restore confidence, come back and regain momentum remains uncertain. In Europe, Acciona, ranked fifth among western owners of onshore wind farms, explicitly ruled out going down the yieldco route.

The need for yieldcos to grow their asset base has been a source of considerable deal flow in the last few years, but it has also led to concerns about the sustainability of the yieldco model. In the pipeline sector, MLPs rely on cashflows to distribute income, but rising interest rates and the falling oil price are squeezing their ability to do this. Both types of entities will be expected to make moves to reassure investors and M&A could be part of this.

### *Healthy renewables deal flow*

Irrespective of specific developments around yieldcos, we expect the flow of renewables deal activity to remain significant, both in the form of utility companies expanding their renewables footprint and financial buyers accumulating assets. The trend of renewables assets moving into the long-term ownership of financial buyers, such as infrastructure and superannuation funds, continues to be an important source of deal activity.

The flow of deals, in part, reflects the maturity of project development. In Australia, for example, many of the operating wind farms are now in the hands of long-term owners and there is less development in the pipeline, with the focus now turning to the development of new sites. In contrast, India has been a recent focus for renewables deals. For example, Morgan Stanley Infrastructure Partners bought a majority stake in Continuum Wind Energy, a Singapore-based company with interests in Gujarat, Madhya Pradesh, and neighbouring Maharashtra. In Europe, much of the recent activity has focused on solar assets in Italy (see Europe section). And in the UK and Spain we have seen financial buyers ready to move in to buy companies adversely affected by government changes to subsidy regimes and debt concerns.

### *Clean air and climate change pressure adding to deal momentum*

A range of countries has set ambitious clean energy targets, which have received reinforcement from the Paris inter-governmental agreement on limiting CO2 emissions. In the US, for example, the final Clean Power Plan sets standards to reduce carbon dioxide emissions by 32% from 2005 levels by 2030. This measure is adding to the momentum for utilities to move from coal to gas as well as to expand their renewable generation capacity. In the US, gas is also a faster-growing market than electricity, and we have already seen Southern Company and Duke Energy make big moves for regulated gas companies, with their respective purchases of AGL Resources and Piedmont Natural Gas.

Iberdrola's acquisition of UIL is indicative of the twin renewables and gas plays expected in the US market. Elsewhere, we see considerable renewables deal activity in countries such as India, China and Brazil as well as in Europe. Sweden's Vattenfall, for example, is expected to sell its lignite generation plant in Germany in the first half of 2016 as part of its decarbonisation strategy and EDF is conducting a "strategic review" of its fossil fuel-fired power generation assets in continental Europe and fossil fuel production and sales outside France.

### *Chinese activity set to stay busy*

Outbound moves by Chinese companies are set to play a prominent role in power and renewables deals in 2016, following on from a busy 2015. The last twelve months have seen significant Chinese activity in South America, Europe and the wider Asia Pacific region outside China. The trend is towards participation in consortium or joint venture arrangements, reflecting the size of deals and the need in some instances to address ownership concerns, particularly with nuclear power projects. We expect to see Chinese buyers being prominent players as a flow of network assets comes to the table in Europe and Australia in 2016.

Renewables are also becoming an important engine of deal activity, with many Chinese renewables companies on the lookout for acquisitions as they seek to expand their portfolios, particularly on the solar side. Chinese companies already have a considerable presence in Asia Pacific renewable energy projects in countries such as India and Australia, and they will continue to look for opportunities in 2016. Domestic deal flow in China is also running at significant levels, with 'gencos' engaged in consolidation and restructuring. Many deals are internal restructurings, particularly with companies seeking to make sure they increase the efficiency of their listed vehicles.

### *Latin American momentum will be maintained*

Brazil, Chile and, increasingly, Mexico are the focus for increasingly important power and renewables deal activity. We expect this momentum to continue in 2016. Despite the current challenging economic and political environment, energy sector deal activity in Brazil grew in 2015, with a weak currency giving an advantage to foreign buyers. Towards the end of the year, China Three Gorges Corporation secured auction wins for nearly 10GW of hydroelectric capacity in Brazil. Chile remains an important focus for companies such as Portugal's Gas Natural Fenosa. State Power Investment Corporation's Pacific Hydro acquisition includes around US$1bn-worth of assets in Chile.

*Many energy technology moves are below the deals radar in the form of non-M&A partnerships or smaller deals.*

With energy sector reform opening up the Mexican electricity sector to private investment, the country is attracting international interest. For example, Spain's Iberdrola is targeting Mexico as one of four countries outside its home regions (the others are the US, Brazil and the UK) where it feels it has an opportunity to boost growth. The first long-term clean energy tender in Mexico will be held in March 2016, with an estimated 1.5-2.5GW to be awarded and further tenders to follow.

### *Energy technology and energy storage moves*

Energy storage and business offerings beyond the meter are two key areas for companies as energy transformation takes hold and changes the energy eco-system. Many of the moves in these areas are below the radar, in the form of non-M&A partnerships or smaller to medium-sized deals. Battery energy storage solutions are already being added to utility-scale solar parks and most leading power companies are actively developing battery storage options.

As 2015 drew to a close, E.ON signed a cooperation agreement with Samsung SDI to assess and develop a potential business model for targeting applications for lithium-ion batteries in selected regions and markets. The agreement focuses on solutions for grid stabilisation for renewable generation sources and customers' demands for decentralised solutions. Earlier in the year, E.ON made its first strategic co-investment in an Australian company, Organic Response, which uses advanced data analytics and connectivity to develop innovative smart lighting controls for commercial and public buildings.

During 2015, Italy's Enel Green Power (EGP) and France's Engie both opened solar power plants combined with battery storage facilities, in EGP's case developed with its technology partner General Electric. In the US, California's Public Utility Commission has a mandate that requires the utilities owned by its three investor-owned utilities, PG&E, Sempra Energy and Edison International, to add 1.3GW of energy storage to the grid by 2020. We expect energy technology moves to play an increasing part in power and renewables M&A in the coming years.

# Deal flow: record highs boost underlying momentum

***Worldwide power and renewables 2015 deal value totalled US$199bn in 2015, a 16% dip on the US$236.2bn of the previous year (figure 2). It's a throttling back of momentum but the headline totals disguise strong activity in much of the sector. Renewables deal activity, for example, has nearly doubled, from US$28.3bn in 2014 to US$55.3bn in 2015, and Asia Pacific deal value soared. The total value of power and renewables deal targets in the Asia Pacific region rose US$41.9bn from US$24.7bn in 2014 to US$66.6bn in 2015 – a new record for sector deal activity in the region.***

The year-on-year dip in the headline total was due to an exceptional number of very big deals in the US gas pipeline sector inflating the 2014 comparisons, rather than any indication that worldwide power and renewables deal momentum is dipping. These one-offs were responsible for a US$69.1bn fall in North American gas deal value year on year. In turn, this accounted for much of the overall US$78.8bn decline in that region's total power and renewables deal value, and more than accounted for the US$37.2bn fall in worldwide power and renewables deal value.

Total worldwide non-renewable electricity and gas 2015 deal value was US$143.8bn, returning the total value of these deals to the middle of the US$100–200bn range established for much of the period since the credit crisis years. Instead, 2015 was most notable for the increased contribution made by renewables to deal flow (figure 3).

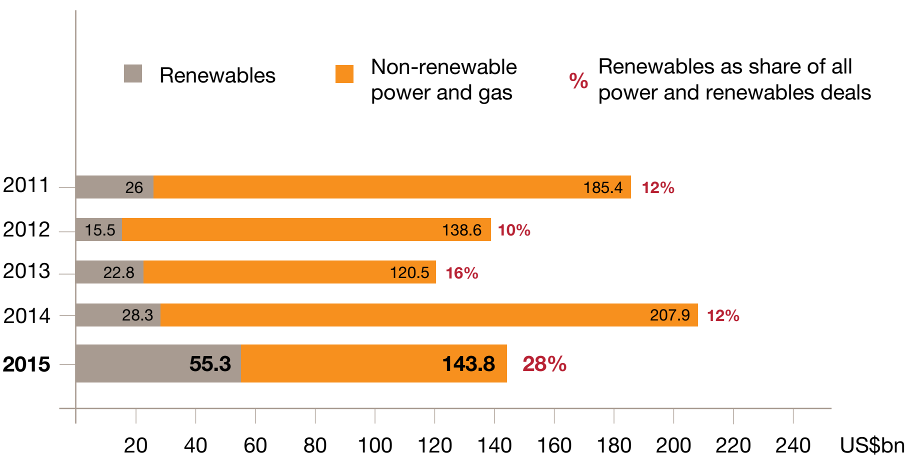
Renewables deal value was up between a quarter and a third in North America, nearly doubled in Europe, more than doubled in Asia Pacific, and rose nearly threefold in Central and South America. Renewables' share of total deal value rose from just 12% in 2014 to 28% in 2015. The number of renewable energy deals isn't notably higher than in previous years; it is the size of deals that is making the difference, with a number of larger hydropower deals featuring in the top five (see figure 7).

**Figure 2: All power, gas and renewables deals by value (US$bn) - 2014 and 2015**

| | | 2014 | | 2015 | | Year-on-year change | |
|---|---|---|---|---|---|---|---|
| | | Number | Value (US$bn) | Number | Value (US$bn) | % number | % value |
| **Total deals** | | **1,054** | **236.2** | **1,004** | **199.0** | **(5)%** | **(16)%** |
| of which: | Power | 438 | 93.2 | 312 | 84.0 | (29)% | (10)% |
| | Gas | 133 | 114.7 | 168 | 59.8 | 26% | (48)% |
| | Renewables | 483 | 28.3 | 524 | 55.3 | 8% | 95% |

**Note:** Numbers are rounded to a single decimal place. Rounding accuracy means totals may not exactly match the sum.
**Source:** *PwC, Power & Renewables Deals.*

**Figure 3: The rise of renewables (US$bn)**




**Source:** PwC, *Power & Renewables Deals*.

# Deal makers: who's doing what

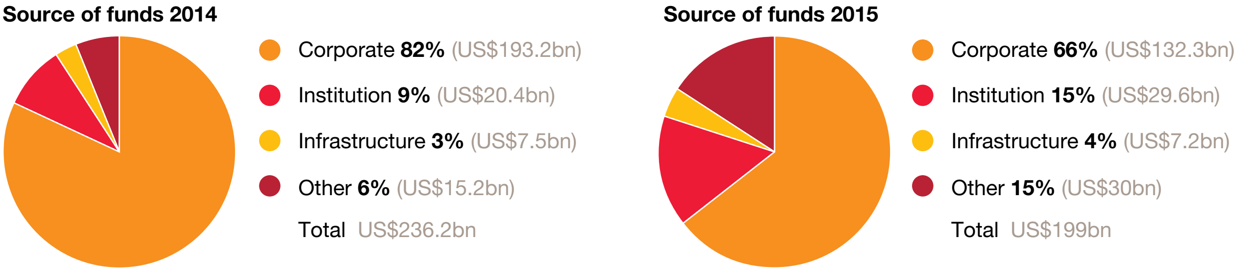
*On the face of it, there has been a big fall in activity from corporate buyers, with a US$ 60.9bn drop in the value of corporate bidder activity (figure 4). But again this is largely due to the impact of the large number of gas pipeline deals, most of which were corporate deals, in the 2014 previous-year comparison. In fact, the 66% deal value share by corporate bidders in 2015 is right in the middle of the range set by the 63% and 69% shares recorded in the two years before 2014.*

We discuss some of the biggest corporate deals in the regional sections later in the report. It is also clear that non-corporate buyers are continuing to play a very significant role in the sector. Indeed, the absolute value of acquisitions by buyers such as insurance, pension, sovereign wealth, infrastructure and private equity funds and others who are not corporates is rising substantially – accounting for US$66.7bn in 2015 compared to US$43bn a year earlier and US$37.2bn in 2013.

The top five power and gas deals tables include a number of the institutions that are prominent in this deal flow. Half of the deals listed involve institutional buyers, predominantly infrastructure investment funds and pension funds, but also including some notable sovereign wealth funds. One of the largest of the deals, the sale of Oncor, arose from the Chapter 11 bankruptcy reorganisation of Energy Future Holdings, the former TXU Corporation. Many of the institutional investors involved were creditors.

While the circumstances of the Oncor deal are something of a one-off, its distribution and transmission assets offer exactly the kind of regulated returns that are attractive to institutional buyers. The four other top power and gas deals featuring this type of buyer also targeted electricity network or gas pipeline assets, with three of them highlighting the internationally competitive nature of the market for such deals. Buyers ranging from Canadian pension and insurance fund Caisse de dépôt et placement du Québec, infrastructure fund Borealis, also from Canada, Dutch pension manager PGGM, China's Gingko Tree Investment Ltd and sovereign wealth funds from Kuwait and the United Arab Emirates were among the buyers for power infrastructure assets in Australia, Sweden and Spain.

**Figure 4: Institutional and infrastructure bidder activity**
**(Deal value shown in parenthesis)**




**Note:** Numbers are rounded to a single decimal place. Rounding accuracy means totals may not exactly match the sum. Corporate includes energy and power and utility companies; Institutions include pension funds, insurance funds, mutual funds, sovereign wealth funds and banks, etc.; Infrastructure funds include specialised infrastructure funds and private equity funds; Other comprises sovereign state, market purchase, private investor, non-disclosed acquirers, management buy-out, etc.

**Source:** PwC, *Power & Renewables Deals*.

**Figure 5: Top five - power deals 2015**

| No. | Value of transaction (US$bn) | Target name | Target nation | Acquirer name | Acquirer nation | Date announced |
|---|---|---|---|---|---|---|
| 1 | 10.4 | TECO Energy Inc | United States | Emera Inc | Canada | 04 Sep 15 |
| 2 | 10.0 | Oncor Electric Delivery Company LLC | United States | Hunt Consolidated Inc; Avenue Capital Group LLC; GSO Capital Partners LP; Arrowgrass Capital Partners LLP; Teacher Retirement System of Texas; BlackRock Inc; Anchorage Capital Group LLC; Centerbridge Partners LP (for an 80% stake in Oncor Electric Delivery Company LLC) | United States | 10 Aug 15 |
| 3 | 7.4 | Transgrid Ltd | Australia | Caisse de dépôt et placement du Québec (25%/20%/20%/20%/15%); Abu Dhabi Investment Authority Ltd - ADIA; Spark Infrastructure Group; Hastings Funds Management; Kuwait Investment Authority | Global consortium | 24 Nov 15 |
| 4 | 7.0 | Fortum Distribution AB | Sweden | Borealis Infrastructure Management Inc (50% / 12.5% / 20% / 17.5%); Tredje AP-fonden; Folksam AB; Forsta AP-Fonden | Canada | 13 March 15 |
| 5 | 4.4 | UIL Holdings Corp | United States | Iberdrola SA | Spain | 25 Feb 15 |

**Source:** *PwC, Power & Renewables Deals.*

**Figure 6: Top five - gas deals 2015**

| No. | Value of transaction (US$bn) | Target name | Target nation | Acquirer name | Acquirer nation | Date announced |
|---|---|---|---|---|---|---|
| 1 | 12.4 | AGL Resources Inc | United States | Southern Co | United States | 24 Aug 15 |
| 2 | 10.8 | PetroChina Pipelines Co Ltd | China | Guolian Industrial Investment Fund Management (Beijing) Ltd; Agricultural Bank of China Ltd; Generali China Life Insurance Co Ltd; Industrial & Commercial Bank of China - ICBC; National Council for Social Security Fund; Taikang Life Insurance Co Ltd; China Construction Bank Corp - CCB; New China Life Insurance Co Ltd; Baoshan Iron & Steel Co Ltd; Youngor Group Co Ltd; Baosteel Group Corp | China | 24 Dec 15 |
| 3 | 6.6 | Piedmont Natural Gas Co Inc | United States | Duke Energy Corp | United States | 26 Oct 15 |
| 4 | 3.9 | PetroChina United Pipelines Co Ltd; PetroChina Northwest United Pipelines Co Ltd | China | PetroChina Co Ltd | China | 24 Dec 15 |
| 5 | 2.2 | Madrileña Red de Gas SAU | Spain | PGGM NV; Electricite de France SA - EDF; Gingko Tree Investment Ltd | Netherlands | 22 April 15 |

**Source:** *PwC, Power & Renewables Deals.*

**Figure 7: Top five - renewables deals 2015**

| No. | Value of transaction (US$bn) | Target name | Target nation | Acquirer name | Acquirer nation | Date announced |
|---|---|---|---|---|---|---|
| 1 | 6.2 | Three Gorges Jinshajiang Chuanyun Hydroelectric Power Development Co. Ltd | China | China Yangtze Power Co Ltd | China | 07 Nov 15 |
| 2 | 3.7 | Power Station (Jupiá and Ilha Solteira Hydro Plants) | Brazil | China Three Gorges Corp | China | 25 Nov 15 |
| 3 | 3.5 | Enel Green Power SpA | Italy | ENEL SpA | Italy | 18 Nov 15 |
| 4 | 3.2 | Longtan Hydropower Development Co Ltd | China | Guangxi Guiguan Electric Power Co Ltd | China | 29 Jan 15 |
| 5 | 2.5 | Invenergy Wind Projects | United States | SunEdison Inc | United States | 06 July 15 |

**Source:** *PwC, Power & Renewables Deals.*

*Europe continues to provide the highest volume of global power and renewables deal activity.*

# Deal places: regional analysis

***The Asia Pacific region and Europe led the way in terms of the number of deals by both bidder and target in 2015. Indeed, at 318 and 313 deals respectively, bidder volumes from Asia Pacific and Europe buyers were nearly level pegging. Target numbers were similarly close. But it was North American deals, and US deals in particular, that remain in front as measured by the value of deals. This comes despite the big year-on-year fall in US gas transactions. This was a key factor in North America's share of all worldwide power and renewables bidder deal value falling from 69% in 2014 to 49% in 2015.***

The share of worldwide target value coming from North America dropped from 67% to 40%. The decline in the share of deal value coming from North American targets and bidders was taken up by the Asia Pacific region. Asia Pacific bidder deal value (largely stemming from China) nearly doubled, while the value of power and renewables targets in the region soared from US$24.7bn to US$66.6bn. As we discuss in the later section on the Asia Pacific region, this represents a record high point for deal activity in the region.

South America was another growth region for M&A, with 56% year-on-year growth taking the value of power and renewables deals in the region to US$12.4bn in 2015. As we discuss in the regional section that follows, much of this activity centred on Brazil and Mexico and we expect to see continued significant deal flow ahead in the region.

We also expect Europe to be a strong focus of activity in the year ahead. Europe continues to provide the highest volume of global power and renewables deal activity, although deal numbers and value dipped in 2015. But this was nothing compared to an almost complete lull in power and renewables M&A in the Russian Federation, where sanctions and currency woes are among the factors clouding the deal environment.

**Figure 8: Deals by target continent**

| North America | 2014 | 2015 | % change |
|---|---|---|---|
| **By target** value of deals (US$bn) | **159.1** | **80.3** | **(50)%** |
| **By bidder** value of deals (US$bn) | 161.9 | **97.3** | **(40)%** |
| **Number of deals** | | | |
| **By target** | 220 | **259** | **18%** |
| **By bidder** | 242 | **287** | **19%** |

| South and Central America | 2014 | 2015 | % change |
|---|---|---|---|
| **By target** value of deals (US$bn) | **8.0** | **12.4** | **56%** |
| **By bidder** value of deals (US$bn) | 5.1 | **3.1** | **(39)%** |
| **Number of deals** | | | |
| **By target** | 77 | **68** | **(12)%** |
| **By bidder** | 50 | **33** | **(34)%** |

| Asia Pacific | 2014 | 2015 | % change |
|---|---|---|---|
| **By target** value of deals (US$bn) | **24.7** | **66.6** | **170%** |
| **By bidder** value of deals (US$bn) | 31.3 | **61.1** | **95%** |
| **Number of deals** | | | |
| **By target** | 316 | **306** | **(3)%** |
| **By bidder** | 333 | **318** | **(5)%** |

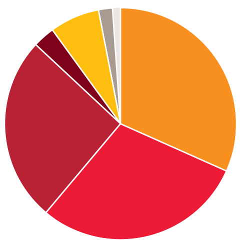
| Europe | 2014 | 2015 | % change |
|---|---|---|---|
| **By target** value of deals (US$bn) | **40.5** | **38.1** | **(6)%** |
| **By bidder** value of deals (US$bn) | 34.8 | **29.6** | **(15)%** |
| **Number of deals** | | | |
| **By target** | 344 | **318** | **(8)%** |
| **By bidder** | 336 | **313** | **(7)%** |

| Russian Federation | 2014 | 2015 | % change |
|---|---|---|---|
| **By target** value of deals (US$bn) | **2.0** | **0.5** | **(78)%** |
| **By bidder** value of deals (US$bn) | 2.0 | **0.5** | **(77)%** |
| **Number of deals** | | | |
| **By target** | 80 | **27** | **(66)%** |
| **By bidder** | 77 | **28** | **(64)%** |

**Source:** *PwC, Power & Renewables Deals.*

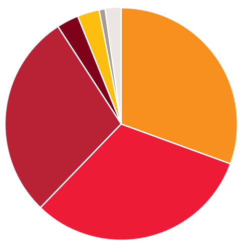
**Figure 9: 2015 deal percentages by continent**
**(2014 percentages shown in parenthesis)**

**Deal number by target**



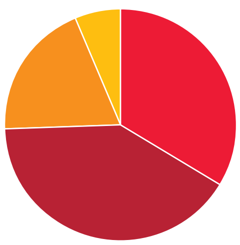
- Europe **32%** (33%)
- Asia Pacific **30%** (30%)
- North America **26%** (21%)
- Russian Federation **3%** (8%)
- South & Central America **7%** (7%)
- Africa **2%** (2%)
- Middle East **1%** (1%)

**Deal number by bidder**



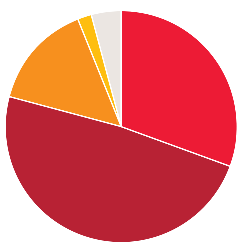
- Europe **31%** (32%)
- Asia Pacific **32%** (32%)
- North America **29%** (23%)
- Russian Federation **3%** (7%)
- South & Central America **3%** (5%)
- Africa **1%** (1%)
- Middle East **2%** (1%)

**Deal value by target**



- Asia Pacific **33%** (10%)
- North America **40%** (67%)
- Europe **19%** (17%)
- Russian Federation **0%** (1%)
- South & Central America **6%** (3%)
- Africa **0%** (0%)
- Middle East **0%** (1%)

**Deal value by bidder**



- Asia Pacific **31%** (13%)
- North America **49%** (69%)
- Europe **15%** (15%)
- Russian Federation **0%** (1%)
- South & Central America **2%** (2%)
- Africa **0%** (0%)
- Middle East **4%** (0%)

**Note:** Numbers are rounded to a single decimal place. Rounding accuracy means totals may not exactly match the sum.
**Source:** PwC, *Power & Renewables Deals*.

# Americas

*Target deal volume in North America was up 18% in 2015. But it was a year of north and south contrasts when it came to deal value. In Central and South America, sector deal value rose by 56%, up to US$12.4bn from US$8bn in the preceding year, while in North America it was down 50%, from US$159.1bn to US$80.3bn. A number of big US gas deals in 2014 had helped boost the previous year comparisons and account for much of the relative fall in 2015.*

As we go into 2016, ownership structures are very much in focus in the US, with questions around the sustainability of the renewables 'yieldco' model intensifying. Concerns about how aggressively certain yieldcos were trying to grow through M&A and the risk profile of some of the assets they were taking in sent some share prices crashing.

### Focus on cleaner power

Renewables deal value rose 29% in 2015 compared with 2014 and, despite the debate around 'yieldcos', we expect momentum to remain strong in the coming year. There is now much greater certainty about the direction of travel for cleaner energy. The House of Representatives and the Senate have passed a Spending Bill for 2016 that extends the energy Production Tax Credit (PTC) and Investment Tax Credit (ITC) for wind and solar projects through to 2020. The Clean Power Plan under Section 111(d) of the Clean Air Act, with its measures to address carbon pollution from new and existing power plants, is driving a shift away from coal in favour of gas and renewables.

Around half of North America's total US$80bn target deal value in 2015 was accounted for by the largest four deals, and moves into gas featured in a number of these. Heading the list was Southern Company's US$12.4bn combination with natural gas utility AGL Resources to create the second-largest utility company in the US, doubling Southern's customer base to nine million. The move gives Southern exposure to a fast-growing natural gas market at a time when the electricity market is exhibiting more modest growth.

## At a glance

- *North American deal volume up 18% year on year but deal value down.*
- *Big rise in Central and South American deal value.*
- *Yieldco ownership structures under pressure.*
- *Strong US deal dynamics include mid-cap consolidation and the move away from coal to gas-fired and renewable generation.*
- *Significant deal activity in Brazil and Mexico.*

Southern was not the only utility moving for gas assets in 2015, and it is a trend that we expect will continue to characterise deals in the US in the year ahead. Duke Energy Corporation announced its intention to buy Piedmont Natural Gas for US$6.6bn. Duke Energy is the largest electric utility holding company in the United States, with regulated operations serving approximately 7.3 million electric customers located in six states in the southeast and Midwest. Both companies are based in Charlotte and have gas customers in neighbouring but different regions. Indeed, Piedmont was originally spun out of Duke back in 1951.

The second-largest deal behind the Southern AGL merger was Canadian power company Emera's US$10.4bn purchase of TECO Energy, a holding company with regulated electric and gas utilities in Florida and New Mexico. The move is a big one for Emera, effectively doubling the size of the company. It adds a presence in Florida and New Mexico to its existing US base in the northeast and also gives it assets in the regulated natural gas local distribution market. Not far behind in terms of deal size was the US$10bn sale of regulated utility Oncor as part of Energy Future Holding's plan to reorganise and emerge from bankruptcy protection.

## Notable inbound moves

Spanish company Iberdrola's US$4.4bn plan to merge its US operations with UIL Holdings represents a major expansion of its American footprint. UIL Holdings is the parent of a group of companies mainly involved in the regulated transmission and distribution of electricity and gas in Connecticut and Massachusetts. After facing some regulatory clearance setbacks, Iberdrola closed the deal at the end of 2015. Avangrid, the new company, has a coast-to-coast presence in the US and operates through three subsidiaries - Iberdrola USA Networks, with eight natural gas and electric utilities in the northeast; Iberdrola Energy Holdings, a natural gas storage and energy services company; and Iberdrola Renewables, the second-largest wind energy producer in the US.

The Emera and Iberdrola deals were the most noteworthy moves by foreign buyers for US power and renewables assets during 2015. The third-largest such move was a US$884m acquisition of a 40% ownership stake in Niska Gas Storage Partners by Canada-based Brookfield Infrastructure Partners. Niska is the largest independent owner and operator of natural gas storage in North America. Brookfield had already acquired US$250 million of Niska's senior debt and its move when Niska came up for sale has given it a 40% ownership stake.

One of the continuing features of US deals is the difficult, often protracted process of securing clearance from state regulators. The largest electricity deal from 2014, Exelon Corporation's US$12.1bn takeover of Pepco Holdings, went into 2016 still awaiting final approval, twenty months after it was first announced. Iberdrola's acquisition of UIL Holdings was initially rejected by Connecticut regulators. New Mexico Public Regulation Commission hearings for Emera's purchase of TECO Energy are set to begin in late May 2016, eight months after the deal was announced.

## Brazil and Mexico deal flow

In South and Central America, power and renewables assets in Mexico and Brazil continue to be the focus of inbound international interest. We anticipate that theme will remain a strong feature throughout 2016, reinforced by local currency weakness and also by the advancement of energy reforms in Mexico. The first long-term clean energy tender in Mexico will be held in March 2016, with an estimated 1.5-2.5GW to be awarded and further tenders to follow. Divestments by domestic owners are also likely to arise as a result of the economic and corruption problems being experienced in Brazil.

For example, in the last ten years or so, companies from outside the energy sector, particularly construction companies, have made investments in Brazilian power projects and we would expect to see some of these being sold to repay debt. Wind energy is expected to grow strongly in Brazil and may spur some smaller deal flow. During 2015, the largest South and Central American deals were the US$3.7bn purchase by China Three Gorges Corporation of the Jupiá and Ilha Solteira hydro plants in Brazil and US company Sempra Energy's purchase of its Mexican joint venture partner Petróleos Mexicanos's stake in Gasoductos de Chihuahua in a US$1.5bn deal.

**Figure 10: North America deals by target**

| North America | Power | | Gas | | Renewables | |
|---|---|---|---|---|---|---|
| | Number | Value (US$bn) | Number | Value (US$bn) | Number | Value (US$bn) |
| **2014** | 67 | 49.2 | 39 | 101.5 | 114 | 8.5 |
| 2015 | **64** | **37.0** | **63** | **32.4** | **132** | **10.9** |
| % change | (4)% | (25)% | 62% | (68)% | 16% | 29% |

**Source:** PwC, *Power & Renewables Deals.*

**Figure 11: South and Central America deals by target**

| South and Central America | Power | | Gas | | Renewables | |
|---|---|---|---|---|---|---|
| | Number | Value (US$bn) | Number | Value (US$bn) | Number | Value (US$bn) |
| 2014 | 34 | 4.2 | 7 | 1.1 | 36 | 2.7 |
| **2015** | **26** | **2.4** | **11** | **2.4** | **31** | **7.6** |
| % change | (24)% | (43)% | 57% | 126% | (14)% | 181% |

**Source:** PwC, *Power & Renewables Deals.*

# Asia Pacific

***Asia Pacific bidder deal value nearly doubled, from US$31.3bn in 2014 to US$61.1bn in 2015, accounting for almost a third (31%) of worldwide power and renewables deal value. The region's target deal value rose even more strikingly, from US$24.7bn to US$66.6bn. These levels represent a new high point for the region, surpassing those reached in the record year for power sector M&A in 2007 (figure 13).***

The increase in Asia Pacific activity has been driven predominantly by Chinese buyers. Seven out of the ten largest deals for targets in the region were purchases by Chinese entities. The vast majority of the Chinese deals were domestic, with deal value being boosted by two large gas pipeline transactions involving PetroChina totalling US$14.7bn and by a US$6.2bn hydropower deal which involved China Three Gorges Corporation on the sell side and as the controlling shareholder in the buyer, China Yangtze Power. As we discuss below, Australian deal activity has also been a significant contributor to deal flow in the region and we continue to expect that to be the case in 2016.

One notable power deal inside the region saw China General Nuclear win the international tender for Edra, which was sold as part of a programme to reduce debt by the Malaysian government's investment fund, 1Malaysia Development Bhd. The US$3.9bn deal encompasses 13 power plants across five countries, from Malaysia to Egypt and Bangladesh. In terms of outbound activity, China Three Gorges Corporation's US$3.7bn purchase of the Jupiá and Ilha Solteira hydro plants in Brazil was the largest move by an Asia Pacific buyer outside of the region.

### *Strong international buyer interest*

International expansion continues to be on the agenda for many buyers inside and outside the Asia Pacific region. The participation of Canada's Caisse de dépôt et placement du Québec, as well as the Abu Dhabi and Kuwait investment authorities, in the US$7.4bn deal for New South Wales (NSW) high-voltage electricity transmission network Transgrid represented the most significant inbound investment in the Asia Pacific region. The consortium was led by Australia's Hastings Funds Management and also included ASX-listed Spark Infrastructure Group.

The Transgrid sale, on a long-term 99-year lease, was the second-largest Asia Pacific deal in 2015. It is set to be followed in 2016 by further NSW sales involving a 50.4% stake in distribution network companies Ausgrid and Endeavour Energy. International interest in the assets is likely to again be considerable, with consortia lining up as the sale process advances. The NSW privatisations will be watched carefully by other Australian state governments as they consider their own policy options. The Queensland state government had reversed an earlier plan for a similar sale but the multiple of the regulated asset base achieved by NSW with Transgrid will keep debate very much alive.

## *At a glance*

- *Record year for Asia Pacific power and renewables M&A in 2015.*
- *Chinese buyers account for most of the largest deals.*
- *Strong international buyer interest in Australia expected to continue in 2016.*
- *India provides a focus for a strong flow of renewables deals.*
- *The sun sets on Australian coal-fired generation deals.*

### *Renewables deal flow*

As 2015 drew to a close, IFM Investors, one of Australia's largest fund managers, announced the sale of renewable energy business Pacific Hydro to China's State Power Investment Corporation with a deal value reported to be around USS$2.2bn. Pacific Hydro has 900 MW of generation capacity across 19 hydro electric and wind generation facilities in Chile, Australia and Brazil.

Within Australia, the absence of bipartisan political support for renewable energy targets has clouded renewables dealmaking in recent years, but that uncertainty was lifted in May 2015 when the government and opposition parties reached agreement on pared-back targets to 2020, creating an improved deal environment.

However, many of Australia's operating wind farms are already in the hands of long-term owners so, despite greater regulatory certainty, future deal flow is unlikely to be spectacular. During 2015, AGL Energy completed the sale of its 50% stake in the 420 MW Macarthur Wind Farm joint venture to Australasian fund manager Morrison & Co. and Santander announced a preferred bidder for its Taralga wind farm.

Renewables were the source of much of power sector dealmaking in India during 2015, as conventional generators focused their energy on fuel supply difficulties. India has become a focus for 'yieldco' acquisitions and, in addition, much renewables deal activity is coming as projects develop and are scaled up. SunEdison entered into agreement with TerraForm Global to sell 425 MW of solar and wind projects in India for an equity consideration of US$231m. Future momentum is likely to depend on how the current decline in yieldco investment performance resolves.

The four largest power sector deals for Indian targets in 2015 were all renewables deals. In the largest of these, the debt situation faced by Suzlon Energy was eased when Dilip Shanghvi's family took a 26% US$457m stake in the company. Dilip Shanghvi is the founder and managing director of Sun Pharmaceuticals and is reported to be India's second-richest person.[1] RenewPower, an Indian renewable energy company with 1600 MW projects operating or under construction, raised an additional US$265 million of equity investment including US$200m from the Abu Dhabi Investment Authority. And Singapore's sovereign wealth fund GIC was behind the US$251m acquisition of Indian clean energy producer Greenko Mauritius.

### *Contrasting fortunes for coal and gas*

Subdued energy demand combined with renewed policy emphasis on cleaner power has left Australian coal-fired assets out in the cold. The difficulties of finding buyers for coal-fired generation with merchant (uncontracted) exposure was highlighted by the sale of the Vales Point power station for just US$0.7m to private owners Sunset Power. The NSW government had earlier tried and failed to find a buyer for the plant in 2014.

There are a number of other coal-fired plants that face a similar fate and it will be difficult to find buyers for such generation unless it is heavily contracted. In the run up to the Paris climate talks, both Origin and AGL Energy announced their intention to exit coal-fired generation, albeit on very long timescales, in AGL Energy's case by 2050. One challenge is the costs associated with site remediation and asset impairment and whether any government support can be offered. This is likely to be the focus of ongoing debate. In India, consolidation of coal-fired generation (and hydro) has been a recent feature of M&A, with a number of sales to larger companies by distressed owners.

In contrast, gas infrastructure has a clear long-term attractiveness, with steady returns underpinned by the role of gas as a bridge fuel from coal to renewables. Institutional buyer interest in gas infrastructure was evidenced by QIC's US$1.3bn purchase of the Iona Gas Storage Facility west of Melbourne in Victoria from EnergyAustralia, a member of the China Light & Power Group. QIC was originally founded by the Queensland state government and is a long-term infrastructure investor with a global platform. "Commodity pricing is currently placing financial stress on corporates. Press rumours suggest both Origin and Santos could divest infrastructure assets, and the sale of gas transmission pipelines connected to LNG facilities could take place, similar to the successful sale of the QCLNG pipeline in 2014.

**Figure 12: Asia Pacific deals by target**

| Asia Pacific | Power | | Gas | | Renewables | |
|---|---|---|---|---|---|---|
| | Number | Value (US$bn) | Number | Value (US$bn) | Number | Value (US$bn) |
| 2014 | 126 | 14.5 | 39 | 2.2 | 151 | 8.0 |
| **2015** | **111** | **27.6** | **44** | **19.9** | **151** | **19.1** |
| % change | (12)% | 91% | 13% | 809% | 0% | 138% |

**Source:** PwC, *Power & Renewables Deals.*

**Figure 13: Record high years – Asia Pacific target deal value**

| | Value (US$bn) | As a percentage of worldwide power and renewables deal value |
|---|---|---|
| 2007* | 50.4 | 14% |
| 2013 | 42.5 | 30% |
| **2015** | **66.6** | **33%** |

**Source:** PwC, *Power & Renewables Deals. * 2007 data from predecessor data series.*

1 Bloomberg Billionaires Index

# Europe

*Power and renewables deal activity in Europe continued to dip in 2015. The number of deals for European targets was down 8% year on year, while target deal value was down 6%, from US$40.5bn to US$38.1bn. European bidder deal value fell further, by 15% from US$34.8bn to US$29.6bn. But, as figure 14 shows, the sector headline totals disguise very dramatic differences between power, gas and renewables deal trends.*

Renewables deal value nearly doubled, from US$9.1bn to US$17.5bn, while power fell 25% and the value of gas deals more than halved. The largest renewables deal was the announcement of the planned integration of Enel Green Power (EGP) into Enel. The US$3.5bn deal in late 2015 will give Enel ownership of the 31.7% stake that it did not already own in EGP. In Portugal, the country's second-largest wind project operator, Iberwind, was sold by private equity fund Magnum Capital for US$1.1bn to Cheung Kong Holdings Infrastructure Limited and Power Assets Holdings, both members of Hong Kong-based CK Hutchison Group.

### A busy renewables market

In Italy, much of the renewables deal focus has been on solar generation. Earlier in 2015, private infrastructure fund F2i SGR was the buyer for E.ON's Italian solar operations as the German utility exited the Italian solar market. F2i subsequently signed an agreement with EGP to form a joint venture for the development of solar PV in Italy. The move came in a busy autumn for EGP, as it also exited the Portuguese renewables market, with the sale of Finerge to First State Wind Energy Investments. Quercus Assets Selection and Swiss Life Asset Managers were among the buyers of Italian solar generation, as solar ownership in the country continued to consolidate.

Notable offshore wind farm deals included US infrastructure fund Global Infrastructure Partners' US$871m acquisition of 50% of the Gode Wind 1 project in offshore Germany from Dong Energy. Australian infrastructure investor Macquarie also added to its portfolio in Europe by purchasing a 49.89% share in Germany's Baltic 2 offshore wind farm from EnBW, in a deal worth US$854m.

## At a glance

- *Sector deal value dips but Europe continues to deliver the highest number of deal targets.*
- *Renewables deal value doubles year on year.*
- *A bumper year lies ahead with a series of network sales and other divestments expected on the 2016 deal table.*
- *Strong international investor appetite continues for regulated network assets.*
- *More big corporate moves ahead as RWE follows E.ON down the demerger route and Areva restructures.*

### Debt and subsidy concerns

Financial buyers have continued to move in to buy companies adversely affected by government changes to subsidy regimes and debt concerns. In the UK, for example, US investment manager Blackrock bought junior market-listed Renewable Energy Generation. In Spain, construction company Grupo Actividades de Construcción y Servicios (ACS) sold 24% of its renewables business to Global Infrastructure Partners (GIP), with the sale linked to a public flotation of the business as a new company - Saeta Yield.

Towards the end of 2015, Spanish construction and engineering company Abengoa declared insolvency, with earlier cuts to Spanish subsidies impacting its renewables assets. Abengoa had expanded rapidly but was highly reliant on debt finance. In a bid to reduce borrowings, Abengoa had created a leveraged yieldco called Abengoa Yield, listed in the US. It surged in early trading back in 2014 but now, like many yieldcos, it is trading at much lower levels amid concerns that the yieldco model may prove too risky.

### *Gas contrasts*

The market for gas-fired power generation remains challenging in much of Europe and buyers for gas-fired generation assets have been scarce. Instead, most of the gas deal activity has centred on gas transmission and distribution assets, whose regulated and predictable returns are attractive to institutional investors. The biggest 2015 power deal in Europe, for example, saw intense interest for Fortum's Swedish electricity grid business, which was sold for US$7bn to a group of Swedish pension and insurance funds and Canada's Borealis Infrastructure Management. The sale concluded the divestment of Fortum's distribution businesses, with the company having earlier sold grids in Finland and Norway.

In Spain, a consortium formed by EDF Invest, China's Gingko Tree Investment Ltd and Dutch pension fund manager PGGM bought Spanish natural-gas distributor Madrileña Red de Gas SAU from Morgan Stanley Infrastructure in a US$2.2bn deal. The favourable selling climate for such assets has prompted the UK's National Grid to prepare for the potential sale of a majority stake in its UK gas distribution business in 2016.

In contrast, the difficult market for gas-fired generation is highlighted by Centrica's experience in finding buyers for some of its larger gas-fired plants. Back in May 2014 it began the process of seeking buyers for three of its larger plants, only to have to give up some ten months later. One of them, Killingholme, is set for closure in March 2016 and joins many other gas-fired power stations in the UK and Europe that are either mothballed or permanently closed. In the UK, stronger recent government commitment to gas and the results of the first capacity market auction have given some encouragement to gas generation. But the outlook for gas-fired generation, both in the UK and in many parts of Europe, remains uncertain and dependent on policy fixes that can give greater certainty to its place in the dispatch merit order.

### *Wider horizons*

Iberdrola's US$4.4bn acquisition of UIL Holdings in the US (see Americas section) was the most notable outbound move by a European utility for a target outside Europe. But Latin America and other growth spots continue to be in a number of companies' sights if the right assets come up. During 2015, Norway's Statkraft and Energias de Portugal each made moves for smaller targets in Chile and Brazil respectively.

We have separated out activity in the Russian Federation. Here, deals have come to a near standstill. A combination of lower oil prices, higher inflation, tighter monetary conditions, currency weakness and sanctions is weighing on M&A activity. The only Russian deal over US$100m in 2015 saw Norilsk Nickel reduce its stake in power utility company Inter RAO with a sale to institutional investors. The deal was valued at US$277m.

### *Looking ahead*

There are plenty of reasons to expect a bumper year ahead for European power and renewables deals. A stream of disposals of network assets is expected, including National Grid's UK gas distribution business, Gas Connect Austria and Thyssengas in Germany. Belgian company Eandis is selling a minority position in its networks. French company EDF is reported to be considering a disposal plan that could encompass up to US$10bn worth of assets over five years. Also there are ongoing negotiations around the future of Areva. More generally, most of the big utilities in Europe continue to actively consider disposals in order to optimise their balance sheets and this is likely to be a source of deals in 2016.

**Figure 14: Europe deals by target**

| Europe | Power | | Gas | | Renewables | |
|---|---|---|---|---|---|---|
| | Number | Value (US$bn) | Number | Value (US$bn) | Number | Value (US$bn) |
| 2014 | 132 | 21.4 | 39 | 10.0 | 173 | 9.1 |
| **2015** | **86** | **16.1** | **40** | **4.4** | **192** | **17.5** |
| % change | (35)% | (25)% | 3% | (55)% | 11% | 93% |

**Source:** PwC, *Power & Renewables Deals.*

**Figure 15: Russian Federation deals by target**

| Russian Federation | Power | | Gas | | Renewables | |
|---|---|---|---|---|---|---|
| | Number | Value (US$bn) | Number | Value (US$bn) | Number | Value (US$bn) |
| 2014 | 70 | 2 | 8 | 0 | 2 | - |
| **2015** | **18** | **0.5** | **6** | **0.0** | **3** | **0.0** |
| % change | (74)% | (78)% | (25)% | (86)% | 50% | 0% |

**Source:** PwC, *Power & Renewables Deals.*

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## *Methodology*

*Power & Renewables Deals* includes analysis of all global power utilities, renewable energy and clean technology deal activity. Power deals includes all deals involving power generation, transmission and distribution; natural gas transmission, distribution, storage and pipelines; energy retail; and nuclear power assets. Deals involving operations upstream of these activities, including upstream gas exploration and production, are excluded. Renewable energy deals are defined as those relating to the following sectors: biofuels, biomass, geothermal, hydro, marine, solar and wind. Renewable energy deals relate to the acquisition of (i) operating- and construction-stage projects involved in the production of renewable energy and (ii) companies manufacturing equipment for the renewables sector. We define clean technology deals as those relating to the acquisition of companies developing energy-efficient products for renewable energy infrastructure.

The analysis is based on published transactions from the Dealogic 'M&A Global database' for all electricity, gas utility and renewables deals. Deals are included at their announcement date when they are partially completed (pending financial and legal closure) or completed. Deal values are the consideration value announced or reported, including any assumption of debt and liabilities. Comparative data for prior years may differ from that appearing in previous editions of our analysis or other current year deals publications. This can arise in the case of updated information or methodological refinements and consequent restatement of the input database.

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