

Power transactions and trends

Global power and utilities
transactions review

2014 review and 2015 outlook

The EY logo is positioned in the bottom left corner of the page. It consists of the letters 'EY' in a bold, white, sans-serif font. The background of the entire page is a black and white photograph of a grand, ornate staircase with intricate carvings and a central light fixture. A bright yellow diagonal stripe cuts across the middle of the image, and a series of white vertical lines of varying lengths are on the left side, creating a sense of depth and movement.

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Introduction

Welcome to the 2014 year-end edition of EY's *Power transactions and trends*, presenting our review of the deals in 2014 and our view on the likely outlook for the 2015 calendar year.

As we expected, 2014 turned out to be a pivotal year for the global power and utilities (P&U) sector, with both deal value and volume reaching four- and five-year highs, respectively, at US\$177.1b from 474 deals. As innovations in financing and technology emerged as new drivers of transaction activity, utilities, for example E.ON, responded as we predicted by adapting traditional business models and rebalancing portfolios. The year also saw institutional investors and private equity firms taking a more important buy-side role in the sector, accounting for almost a quarter (24%) of the total deal value in 2014, a share which represents a five-year high.

The reshaping of the US sector continued as diversified utilities focused on regulated assets and independent power producers (IPPs) grew their presence. The US sector saw 15 billion-dollar-plus transactions – significantly more than in 2013 – with buyers paying a premium for prized rate-regulated assets.

In Europe, regulatory changes created a challenging operating environment, with many utilities questioning the viability of traditional business models as renewable energy became increasingly representative in the generation mix. Divestments and global capital redeployment are now at the heart of the utility agenda.

As predicted in our 2013 year-end edition of *Power transactions and trends*, market reforms in Japan and Mexico became clearer and started to drive activity. In 2015, we expect to see Japan and Mexico grow further, and we are calling out Africa as the next area of growth, as governments alter structural arrangements to welcome new entrants. The *Africa in focus* section in this edition highlights the tremendous challenges and opportunities the continent faces in its quest for greater levels of electrification, and, in turn, economic prosperity. As always, we expect consortia-based entry strategies will best navigate local business and legislative regimes, a tactic which offers opportunities for both inbound and domestic utilities.



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2014: a year in review

Deal activity hits a five-year high as utilities and financial investors turn to M&A to drive earnings growth

2014 was a year of transformation for P&U companies across the globe, with a significant jump in transactions led by portfolio optimization in the US, business model and geographical restructuring in Europe and financial consolidation in the Asia-Pacific region. Deal value reached US\$177.1b from 474 deals, up 41% from 2013. The majority of these deals were strategic – complementing existing generation portfolios or competitive retail businesses, taking positions in markets or shedding unregulated or distressed assets. In addition to regional drivers, there were several global themes that led to higher deal activity. Key drivers of 2014 deal activity included:

Market and regulatory reforms. Around the world, governments progressed changes to their energy sectors to both increase competition and attract investment. Reform processes, including privatization and unbundling of integrated state-owned utilities, were seen in markets including Mexico, Japan, the Middle East, Africa and in Oceania.

Renewed focus on regulated assets. The hunt for stable returns and cash flows ensured regulated assets remained firmly in the sights of financial investors and utilities. Despite trading at above-average multiples, these assets still attracted premiums 15%-35% over stock prices prior to sale, highlighting their attractiveness to investors.

Emerging nations are the new M&A hotspots. Transaction activity in emerging markets such as India, Mexico, the Middle East, North Africa and Latin America is at an all-time high. Cross-border M&A activity targeting these markets, particularly from European utilities, allowed investors to access high-growth markets and diversify portfolios beyond domestic markets.

Renewables gathering mainstream investments. Transaction activity in the renewables segment remained strong throughout the year with deal value more than doubling to US\$38b, while volumes rose 21% from 2013.

Changing ownership structures as financial investors and utilities join forces. Financial investors are raising their ownership stakes in P&U assets and are becoming a significant source of capital for the sector's transactions. In 2014, acquisitions by these investors represented 24% of the total deal value.

Figure 1. Global P&U transaction snapshot (US\$b)

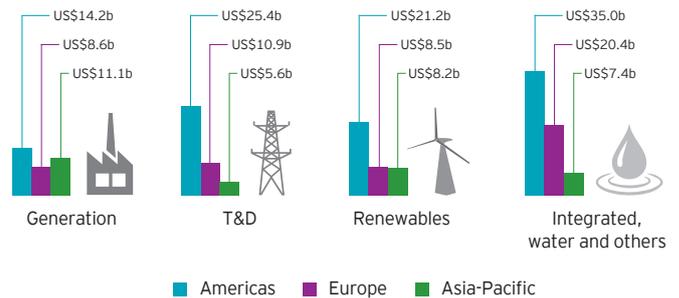


Figure 2. Global P&U deal value and volume (2010-14)



US megamergers as utilities drive growth through consolidation and asset rebalancing

The US P&U sector has seen rising M&A activity over the past 12 months, with utilities' acquisition strategies largely focused on accumulating regulated assets to derisk asset bases, acquiring assets outside home territories to moderate reducing energy demand dynamics and purchasing renewable assets to comply with environmental regulations. Some of the many billion-dollar-plus deals over the past year included Exelon's US\$12.2b acquisition of Pepco Holdings to increase its regulated asset base, NextEra's US\$4.3b acquisition of Hawaiian Electric to expand into renewables and Laclede Group's US\$1.6b acquisition of Alabama Gas Corporation to expand its footprint beyond Missouri. Many deals, particularly those involving regulated network assets, resulted in high premiums being paid by utilities and financial investors keen to acquire assets that add long-term value.

Table 1. Premiums offered in the top US transactions in 2014

Announcement date	Target	Bidder	Premiums (offered vs. last closing prices)
30 April	Pepco Holdings Inc.	Exelon Corp.	24.7%
03 December	Hawaiian Electric Co.	NextEra Energy	19%
23 June	Integrus Energy	Wisconsin Energy	17%
20 October	Cleco Corp.	Macquarie-led consortium	15%

Source: Bloomberg; EY analysis

Despite a slight stabilization in natural gas prices and the retirement of coal-fired plants, wholesale supply and demand dynamics continue to drive low forward-power price curves across most markets, leading to utilities reviewing operations and considering divestments of market-exposed generation assets in favor of rate-regulated assets and operations. 2014 saw merchant asset divestment activity of over US\$7b, with notable deals done by utilities such as Duke Energy, Exelon Corp. and PPL Corp. The Midwest also hosted a particularly large number of transactions due to that region's volatile returns and competitive market challenges. These assets are attractive targets for IPPs, as seen in Dynegy's acquisition of 12.5GW of coal and gas generation assets from Duke Energy and Energy Capital Partners, LLP (ECP) for US\$6.3b.¹

European divestment and privatization programs provide thrust to global M&A

Persistent weak electricity demand, depressed generation margins and high-cost regulatory frameworks continued to challenge the traditional business models of European utilities. While divestments of non-core activities, including meter ownership and meter-reading activities, were common in 2013, disposal programs in 2014 centered on network deals, sales of operational renewable assets and capital-intensive onshore wind developments. Stable returns on these assets attracted significant investor interest, generating enough cash for utilities to reduce debt and invest in growth markets. Divestments by utilities such as DONG Energy, E.ON, Enel, EDF, Fortum, RWE DEA and Vattenfall contributed deals worth US\$18.3b in 2014.

A number of utilities demonstrated a willingness to exit markets. E.ON sold assets in Italy and Spain, while Enel did the same in Slovakia and Romania. Cheap coal supply from the US, as well as sluggish demand, put significant gas generation capacity out of the merit order, pushing utilities to either mothball or divest assets.

Besides divestments, progress on long-pending privatization announcements was a big relief for investors. Italy, Turkey and Cyprus all firmed up their privatization plans to cut debt. Italy, for example, planned the privatization of hundreds of public utilities, and Turkey invited bids for generation assets, with the aim of increasing competition within the sector.² Political uncertainty continued in Greece around its plans, with the Government announcing in January 2015 a freeze to the privatization agenda.

1. "Dynegy Surges After \$6.25 Billion Bet on Power Prices," Bloomberg, 23 August 2014, www.bloomberg.com/news/2014-08-22/dynegy-to-buy-duke-s-midwest-generation-business-correct-.html

2. "Turkey: Energy Privatization In Turkey And Strategic Importance," Mondaq, 19 November 2014, www.mondaq.com/x/160958/Energy+Law/Energy+Privatization+In+Turkey+And+Strategic+Importance

Evolving energy policies and stable returns increase attractiveness of renewables

Global M&A activity in renewables remained strong in 2014 with deal value and deal volume reaching new highs of US\$38b from 200 deals. Several regional factors underpinned the rise in activity. In Europe, the diversity of renewable resources, stringent environmental regulations and divestments ensured the region remained the world's epicenter for renewable M&A. Europe contributed 22.3% to the total renewables deal value and 45% to deal volume. Utilities including GDF Suez and DONG Energy sold plants to build cash reserves as power prices slumped and competition increased from independent generators.

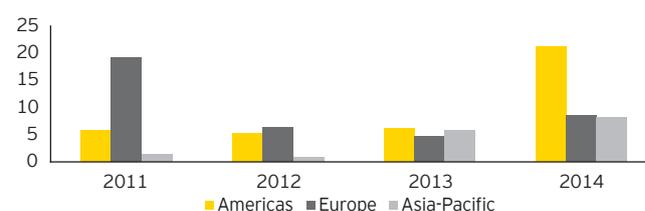
The emergence of the US as a new hub for clean energy transactions was driven by heightened deal activity in the wind energy sector and growth in YieldCos (dividend growth-oriented public companies, created by parent companies). The country hosted six billion-dollar-plus transactions worth US\$12.9b.

In the US, as well as in some other markets, including Spain and Italy, renewable M&A activity was also driven by the phasing out of renewable support mechanisms. This is prompting decisions by some conglomerates and primary developers to sell these assets.

Elsewhere, as more countries adopt supportive renewable energy policies, we are seeing increased investment activity in the segment. The Middle East, Asia-Pacific, Latin and South American regions, as well as China and India, were some of the most active destinations for renewable activity in 2014 outside the US and Europe.

Throughout the world, buyers for renewable assets were dominated by utilities and IPPs, which contributed deals worth US\$28.6b equating to 75% of the total renewable deal value in 2014.

Figure 3. Renewables deal value by geography, 2011-14 (US\$b)



Source: Mergermarket database; EY analysis

Financial investors become integral in the changing power and utilities landscape

As demand for infrastructure funding rises and utility balance sheets become increasingly stretched, financial investors are emerging as a valuable buyer pool for P&U transactions. Financial investors participated in 118 deals worth US\$42.5b in 2014, representing a five-year high and more than 100% growth from 2013. These sales raise much needed capital for utilities while giving financial investors the opportunity to diversify their portfolio by investing in assets with long-term stable cash flows.

Table 2. Top five financial deals in 2014

Announcement date	Target	Target country/territory	Bidder	Bidder country/territory	Deal value (US\$m)	Transactional rationale	Segment
28 March	RWE DEA	Germany	L1 Energy	Russia	7,100	Divestment by RWE	Others: O&G exploration
20 October	Cleco Corporation	US	Macquarie consortium	Australia	4,723	Steady long-term returns offered by Cleco's regulated business	Integrated
28 November	E.ON Espana, S.L.	Spain	Macquarie Group Limited; Wren House Infrastructure Management	Australia; Kuwait	3,123	Divestment by E.ON to fund expansion in growing economies and reduce debt	Integrated
17 February	TenneT Offshore DolWin3 Beteiligungs GmbH & Co. KG (67% Stake)	Germany	Copenhagen Infrastructure Partners	Denmark	2,344	Transaction is in line with TenneT's strategy to partially fund German offshore grid connections	T&D
29 August	Wheelabrator Technologies, Inc.	US	Energy Capital Partners, LLC	US	1,940	Divestment by parent company Waste Management to focus on core business and reduce volatility due to electricity sales	Renewables

As technology matures, financial investors are becoming more comfortable with renewable energy projects. Pension funds now see renewable energy as a viable long-term investment, as returns of 8% to 9% beat those offered by government bonds and other debt instruments. In December 2014, two Canadian pension funds announced an agreement with Spanish banking giant Banco Santander to jointly acquire a portfolio of renewable energy and water infrastructure assets valued at over US\$1.3b. Infrastructure funds also emerged as the leading buyers for European assets. In November 2014, E.ON agreed to sell its Spanish assets to Australia's Macquarie Group and Kuwait's sovereign wealth fund in a deal worth US\$3.1b.³ Macquarie is reportedly looking to expand its portfolio of power assets through investments in continental Europe.

Merchant asset divestments in the US continued to attract private equity firms and funds such as ArcLight Capital Partners, LLC; CDP Infrastructures Fund; Riverstone Holdings LLC; and Energy Capital Partners LLC. Access to cash and diversified portfolios allow these investors to hold on to these assets for a relatively longer time thus moderating the volatility in the commodity prices. Natural gas prices have rebounded above US\$4 per mmbtu because of a cold winter thus far in 2015. With projections of prices to remain steady in the near-term or even rise, we are expecting heated competition for merchant assets between financial investors and IPPs.

Australia and China lead Asia-Pacific investors in global push

M&A activity in the Asia-Pacific P&U sector mirrored 2013, with deal value and volume holding steady at US\$32.3b and 145 respectively, compared to US\$34.5b from 96 deals the previous year.

While the increasing global expansion of Chinese state-owned players and Australian infrastructure funds captured much of the attention, accelerating reforms in India and privatizations in Australia also led to some interesting opportunities. India's new Government has renewed optimism in the sector, translating into some big-ticket deal announcements. JSW Energy Ltd.'s US\$1.6b purchase of Jaypee hydro assets, and Adani Power's twin acquisitions – purchasing Lanco Infratech's 1,200MW thermal plant for US\$984m and Avantha Power's Korba West Power unit for US\$680m – were some of the year's prominent transactions. We see this as a consolidation phase for India's P&U sector, with large players taking advantage of depressed valuations to use M&As to expand generation capacity.

Australia's appeal as an investment destination remained strong in 2014 with the country hosting deals worth US\$6.2b compared to US\$7b in 2013. Chinese players remained active, led by Cheung Kong Holding's US\$3.7b acquisition of an 82.5% stake in natural gas distribution company Envestra.⁴ The high premium offered by Cheung Kong reflects the strong appetite for infrastructure assets in the current market.

Both Chinese state-owned power companies and Japanese trading houses maintain strong mandates for their "go-abroad" strategies. State Grid Corporation of China's (SGCC) acquisition of a 35% stake in Italy-based CDP Reti SpA for US\$2.8b reflects strong Chinese Government support for global expansion. Japanese trading houses are targeting renewable, water and generation assets across the globe. Marubeni Corporation was particularly active, with acquisitions including a 50% stake in a DONG Energy wind farm project, a water business in Portugal, and a Cambodia-based generation and transmission company.

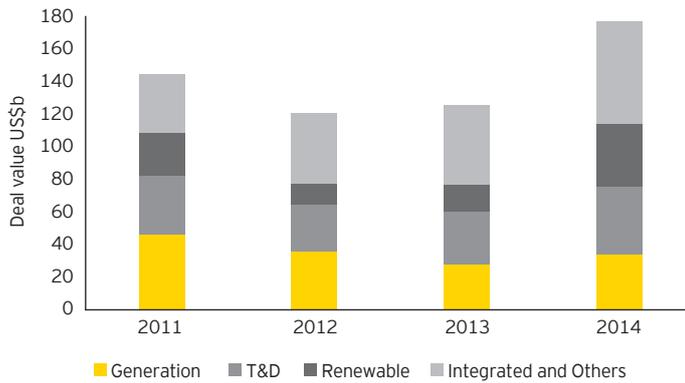
3. "Macquarie Group, Kuwait's Sovereign-Wealth Fund to Buy E.On's Spanish Assets," The Wall Street Journal, 27 November 2014, www.wsj.com/articles/e-on-to-sell-spanish-assets-1417107498

4. "Li Ka-Shing Group to Purchase Envestra in A\$2.4 Billion Deal," Bloomberg, 30 May 2014, www.bloomberg.com/news/2014-05-30/li-ka-shing-s-cheung-kong-to-buy-envestra-in-a-2-4-billion-deal.html

Global snapshot

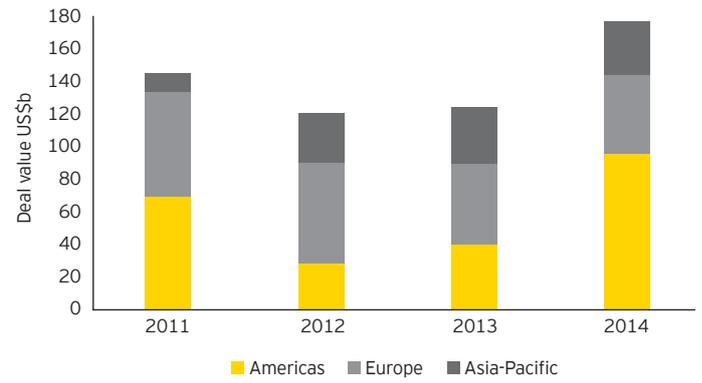
Led by US megamergers and a strong appetite for renewables, the Americas led global M&A activity in 2014

Figure 4. Global P&U deal value, by segment (2011-14)



Source: Mergermarket database; EY analysis

Figure 5. Global P&U deal value, by region (2011-14)



Source: Mergermarket database; EY analysis

Europe's dominance of the global P&U M&A stage is over, with strong deal momentum in the US putting the Americas firmly in

the spotlight. Below is a snapshot of 2014's notable deals and trends across the biggest regional P&U hubs.

Americas



- ▶ The US remained the powerhouse behind the steep rise in Americas deal activity in 2014. The country hosted 76 deals worth US\$62.4b, 65% of the total region's deal value. Several large utilities divested competitive generation assets and recycled capital by purchasing regulated assets to expand their portfolio. Wisconsin Energy Corporation's US\$9.1b acquisition of Integrys Energy Group and Exelon Corp.'s announcement to acquire Pepco Holdings for US\$12b were the biggest deals of the last three years.
- ▶ Renewable asset transactions in the Americas reached a new high in 2014, contributing over 55% to the total global renewable deal value of US\$38b.

- ▶ The significant jump in activity was driven primarily by large US transactions underpinned by coal capacity retirements and renewable purchase obligation targets. US-based renewable energy company NextEra Energy's US\$4.3b acquisition of Hawaiian Electric Industries was the year's largest deal of the segment.
- ▶ Activity increased in Latin and South America, which saw deal value triple from 2013 to reach US\$23.4b. Chile led the way, hosting deals worth US\$19b – 81% of the total deal value. Enel's US\$10.2b binding offer to buy a 60.6% stake in Chile's Enersis from its own Spanish unit Endesa to gain further control in the region was the largest deal of the year.⁵ In October, Spain-based Gas Natural Fenosa's (GNF) acquired Compañía General de Electricidad, S.A. (CGE) for US\$7.6b, furthering GNF'S strategy to strengthen its position in Latin America and diversify geographically.
- ▶ Rising electricity prices combined with hydropower's lack of sustainability have led to rapid expansion of wind farms in Brazil. The country hosted 21 deals worth US\$3.6b, with wind energy transactions making up the majority. Domestic players contributed much of the deal activity.

Table 3. Top five Americas deals

Announcement date	Target	Target country/territory	Bidder	Bidder country/territory	Deal value (US\$m)	Segment
30 April	Pepco Holdings Inc.	US	Exelon Corporation	USA	12,186	T&D
17 September	Enersis SA (60.62% Stake)	Chile	Enel Energy Europe S.r.l	Italy	10,214	Integrated
23 June	Integrys Energy Group, Inc.	US	Wisconsin Energy Corporation	USA	9,037	Integrated
12 October	Compañía General de Electricidad SA	Chile	Gas Natural Fenosa	Spain	7,577	Integrated
1 May	AltaLink, L.P.	Canada	Berkshire Hathaway Energy	USA	5,516	T&D

5. "Enel makes 8.25 billion euro offer for Endesa's stake in Enersis," Reuters, 11 September 2014, www.reuters.com/article/2014/09/11/us-enel-endesa-restructuring-idUSKBN0H62DR20140911

Europe



- ▶ The European utilities sector continued to face headwinds from a slow economic recovery, uncertainty surrounding generation mix and tightening regulations. As rising renewable energy supply continues to weigh on power prices, utilities resorted to divestments to raise cash, with financial investors emerging as leading buyers. Private equity firms, infrastructure funds and pension agencies invested a cumulative US\$22.3b in 2014 in European P&U assets via acquisitions. This is a steep rise compared to 2013 when financial deal activity amounted to US\$10b.

- ▶ Domestic European funds and private equity firms such as Denmark-based Copenhagen Infrastructure Partners and PKA A/S, and UK-based Renewables Infrastructure Group and iCON Infrastructure were active in the buyer community. At the same time, an influx of Canadian-, Australian- and US-based investors continued with foreign financial investors participating in deals worth US\$8.3b. Renewables and gas generation assets were key targets.
- ▶ Unlike previous years, today's divestment agenda is driven by more than the need to reduce debt. Now, funding expansion to growing economies and service lines is equally important. In 2014, European utilities spent US\$20.1b on acquisitions outside Europe, with Latin America the preferred destination. GNF's controlling stake in Chile's CGE is likely to make it that country's largest electricity distributor, with a 40% market share, and its biggest power line operator.⁶
- ▶ Germany (29 deals, US\$12.3b), Spain (16 deals, US\$6.3b), UK (23 deals, US\$4.4b), and Italy (23 deals, US\$4.7b) were some of the most active M&A destinations.

Table 4. Top Europe deals

Announcement date	Target	Target country/territory	Bidder	Bidder country/territory	Deal value (US\$m)	Segment
28 March	RWE DEA	Germany	L1 Energy	Russia	7,100	Others: Exploration
28 November	E.ON Espana, S.L.	Spain	Macquarie Group Limited; Wren House Infrastructure Management	Australia; Kuwait	3,123	Integrated
31 July	CDP RETI SpA (35% stake)	Italy	State Grid Corporation of China	China	2,814	T&D
17 February	TenneT Offshore DolWin3 Beteiligungs GmbH & Co. KG (67% stake)	Germany	Copenhagen Infrastructure Partners	Denmark	2,344	T&D

Asia-Pacific



- ▶ The Asia-Pacific region experienced strong deal activity in 2014 led by growing electricity and gas demand and positive regulatory reform in several countries. China, Australia and India together contributed deals worth US\$25b of the total regional deal value of US\$32.3b in 2014.
- ▶ Big opportunities offered by potential energy reforms in countries including India will see investors moving quickly to secure positions in the sector. With India aiming to improve fuel supply and alleviate the distribution

sector's financial challenges, buying distressed generation assets at current valuations could turn out to be a profitable strategy. In addition to the country's large domestic deals, several foreign players including GDF Suez, Fortum and SembCorp are also looking to expand further into India.

- ▶ As domestic consolidation in China continues, reforms within the Chinese utilities sector are likely to create new investment opportunities. It has been reported that the first draft of Power Sector Reforms has been submitted to the National Development and Reform Commission (NDRC) for discussion, which is expected to open the market to increased private investment. Inbound deal activity in China reached US\$14.4b with more than 87 deals, compared to US\$22.7b and 44 deals in 2013.
- ▶ Privatization of generation assets in New South Wales fueled M&A activity in Australia. AGL Energy acquired Macquarie Generation for \$1.4b and Snowy Hydro acquired a 667MW gas-generation plant from Delta Electricity. After the successful privatization of these assets, the New South Wales Government has committed to sell the US\$16b leases for its grid assets if re-elected in early 2015.⁷

Table 5. Top 5 Asia-Pacific deals

Announcement date	Target	Target country/territory	Bidder	Bidder country/territory	Deal value (US\$m)	Segment
30 May	Envestra Ltd. (82.5% stake)	Australia	CK ENV Investments Pty. Ltd.	China	3,741	T&D: Gas
16 November	Himachal Baspa Power Company Ltd.	India	JSW Energy Limited	India	1,571	Renewable: Hydro
12 February	Macquarie Generation	Australia	AGL Energy Limited	Australia	1,358	Generation
12 November	United Envirotech	Singapore	Consortium formed by KKR and CITIC	USA, China	1,352	Water treatment
13 October	Stakes in China-based power assets	China	Huaneng Power International Inc.	China	1,195	Integrated

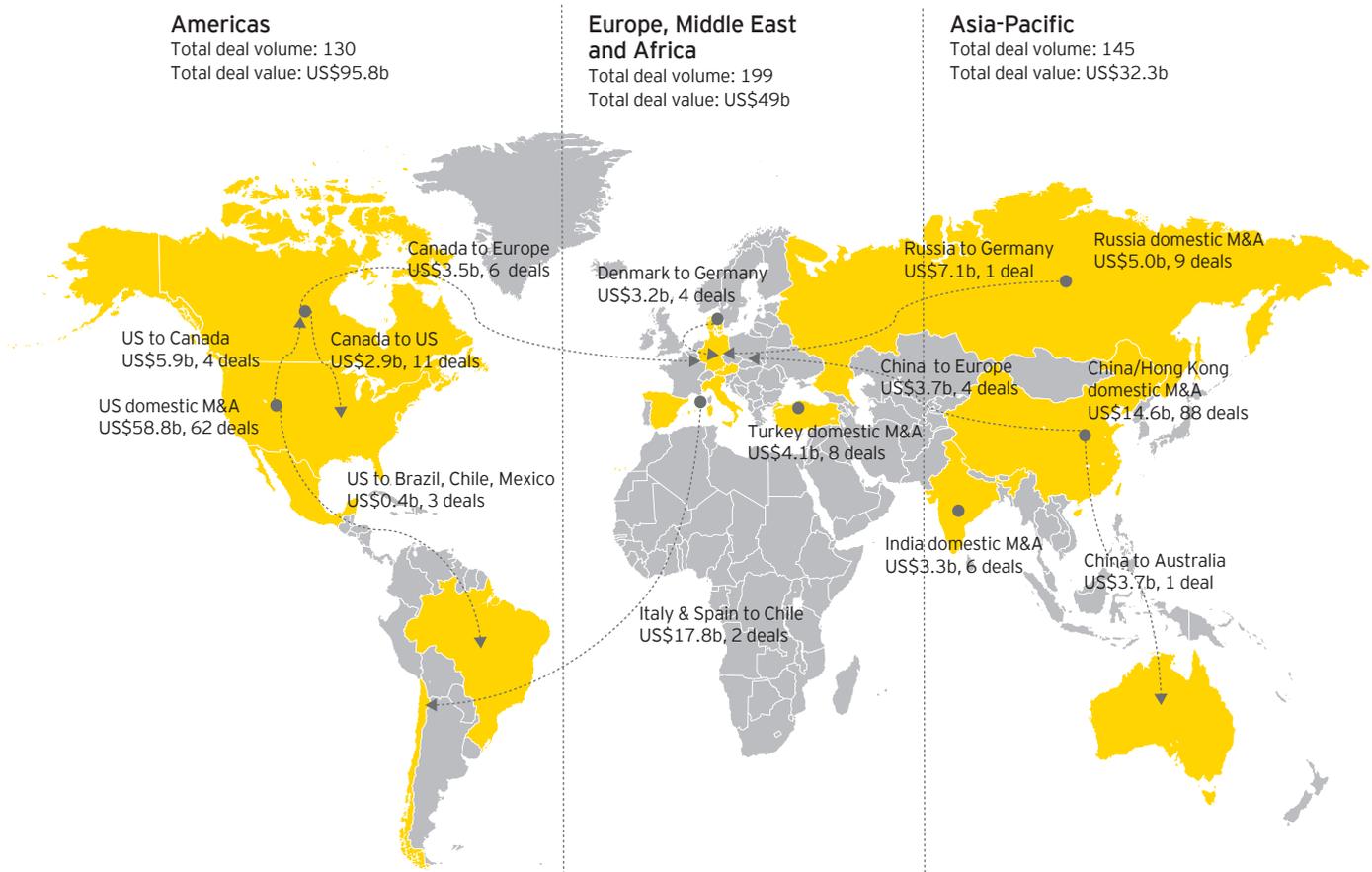
6. "Gas Natural Fenosa reaches agreement to buy CGE - the largest electricity and gas distributor in Chile," Gas Natural Fenosa, 12 October 2014, www.gasnaturalfenosa.com/en/press+room/news/1285338473668/1297259553788/gas+natural+fenosa+alcanzo+un+acuerdo+para+comprar+cge+la+mayor+distribuidora+de+electricidad+y+gas+de+chile+por+2600+millones+de+euros.html

7. "Australia's New South Wales state to sell electricity network for \$16 billion," Reuters, 17 December 2014, www.reuters.com/article/2014/12/18/us-australia-privatisation-idUSKBN0JW04F20141218

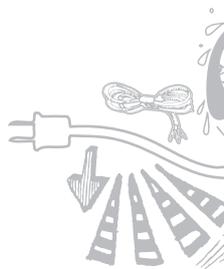
Capital flow tracker

The transformation of the global P&U sector has opened up a range of opportunities for investors across the globe. While cross-border transactions have been a common feature of the sector for a long time, the trend picked up pace in 2014, driven by changing regulatory and economic environments, and we expect this to continue in 2015. This section highlights the key investment destinations chosen by utilities and financial investors in the current dynamic environment.

Figure 6. Cross-border and domestic capital flow



Source: EY analysis



Africa in focus

Powering Africa's potential

The insider's guide: investing in Africa's P&U sector

South African renewables win over investors



Powering Africa's potential

With energy policies designed to attract private investment, Africa could become the world's next industrial hub.

Report by **Matt Rennie**.

I'm optimistic about the prospect of Africa as an emerging investment and development powerhouse. The continent's demographic boom – by the end of the century, almost half the world's children will have been born in Africa⁸ – and an abundance of natural resources suggest to me that Africa has the potential to see strong growth over coming decades, and will emerge as a long-term superhub for global industry and services.

Electricity and economic growth

Achieving this economic potential will require Africa to secure reliable access to electricity. It is estimated that growing economies need around 800GWh of energy to drive a billion dollars of GDP. This drops to around 300GWh for developed economies. Without power, an economy simply can't function and grow.

Given this link between electricity supply and economic growth, the ambitious programs to increase electrification across Africa are not surprising. In Congo, the Government has announced plans to increase electrification from 9% to 26% by 2020, while in Nigeria, the target is to reach 100% (from a current 45%) by 2030. Rwanda's goal is to progress from 17% to 60% by 2020. While these targets are achievable, the efforts behind them will be intense. For example, meeting Nigeria's goals will involve the connection of 1.5m customers each year until 2030.

One of the success stories to date is Ghana, which has gone from just 25% electrification in 1989 to 75% today. At the core of the country's success was its decision to set electrification as a national objective in the name of economic development. Another star player is Mali, which has used innovative mini-grid solutions to lift its electrification rates to over 25%.⁹

Policy is paramount

If African countries are to meet their electrification targets, they will need to put in place appropriate energy policies. To me, the process of building effective energy policy involves:

- ▶ **Understanding** the link between energy and economic and social growth.
- ▶ **Identifying** the gaps between the current state of the legislative, regulatory and policy settings and that of a future energy market that attracts investment.

- ▶ **Determining** which of the different energy policy options should be employed to deliver the desired future market and then charting a course to deliver this.
- ▶ **Implementing** the chosen energy policy through both political and bureaucratic processes.

Understandably, different countries are at different stages of this process, depending on their existing development, electrification and governance as well as the maturity of individual regulatory and administrative environments. Botswana, Namibia and South Africa stand out as countries further along the policy curve than others.

Attracting the private sector

Getting the policy right will create an attractive environment for investment, particularly foreign capital, which will be critical in delivering the more than US\$200b needed to fund Africa's electrification agenda over the next 20 years. We are already seeing positive signs that private sector capital is keen to secure a stake in the continent's energy market with deals worth more than US\$1.3b taking place across Africa over the past two financial years.

Many of these deals have been done in the renewables sector, particularly in Sub-Saharan Africa (SSA) where South Africa has become a global hotspot for renewable projects (see Ben Warren's article). It is not hard to see the appeal of the region for investors, who see long-term growth prospects in wind, solar and geothermal generation. In 2014, the region saw more non-hydro renewable energy capacity come online than in the entire period from 2000 to 2013, making it one of the world's exciting new markets for renewables.

Clean energy investment in SSA is likely to rise from US\$5.9b in 2014 to US\$7.7b in 2016, led by South Africa, Kenya and Ethiopia.¹⁰ Other countries, including Ghana, are using incentives and assurances of grid connection to attract investors. I see this trend continuing for two key reasons. Firstly, achieving electrification targets in remote areas requires innovation in the supply mix, as the economics for connecting poles and wires are simply not there in many cases. Secondly, countries are seeing the benefits of diversity in fuel mix. With the reductions in manufactured costs of wind and solar energy, these are quickly becoming options for extending supply across the population.

8. "Africa's population: can it survive such speedy growth?", *The Economist* website, www.economist.com, 23 August 2014

9. Africa Energy Outlook 2014, IEA

10. "Africa to Add More Renewables in 2014 Than Past 14 Years," Bloomberg, 21 August 2014, www.bloomberg.com/news/articles/2014-08-21/africa-to-add-more-renewables-in-2014-than-past-14-years

The China factor

China is an investment powerhouse in Africa. Between 2005 and 2011, Chinese investors poured more than US\$10b into the continent, with target countries including Nigeria, Ethiopia, Zimbabwe and South Africa.

China's dominance stems from two key advantages:

1. **Experience and perspective:** A long history of investment activity in Africa gives Chinese state-owned companies a measured and realistic view of business risk, which, in some African countries, is lower than that in parts of Asia-Pacific or Europe.
2. **Outbound focus:** A focus on outbound investment sees Chinese state-owned companies actively securing energy assets, particularly power networks, all over the world.

This Chinese interest is a positive trend for Africa's energy sector, given the huge investment required over the next couple of decades. We see Chinese capital as continuing to play an important role in meeting future electrification targets.

The big numbers

The size and scope of Africa's electrification challenge are staggering:

- ▶ 620m people in Africa live without power
- ▶ 50% of all people in the world without electricity live in Africa
- ▶ 8,000kWh is the average annual electricity use of a household in the developed world
- ▶ 225kWh is the average annual electricity use of a household in Africa (excluding South Africa); this is the equivalent of powering less than two light bulbs for a year
- ▶ US\$450b is needed to build new generation capacity in Africa over the next 25 years

Africa Energy Outlook 2014, IEA

Outlook for 2015

I see four key factors defining investment in Africa's energy market during 2015 and beyond:

1. **Electrification agenda:** This will continue to drive strong demand growth of around 5% in consumption across Africa, which is more than double the global projection for consumption growth.
2. **New capacity:** Expect to see new capacity of around 8GW and worth about US\$8b installed in SSA this year to fuel this growing demand.
3. **Market reforms:** Continued progress in some countries to reform market models and regulatory regimes should see increased involvement of the private sector. Ethiopia is currently negotiating to allow privately owned power plants, Ghana has committed to significant reform and South Africa is continuing to push for greater diversity of generation mix.
4. **Global trends to diversify:** The investment trends we are seeing around the world to diversify and rush for margins in high-growth regions will result in increasing attention on Africa. As utilities lose revenue in traditional strongholds, expect to see Africa emerge as an attractive market to maintain core business in new locations.

As these factors drive Africa's appeal, we should see the continent open up further to foreign players including European, Chinese and US investors driven by economic and regulatory factors in their domestic regions.



The insider's guide: investing in Africa's P&U sector

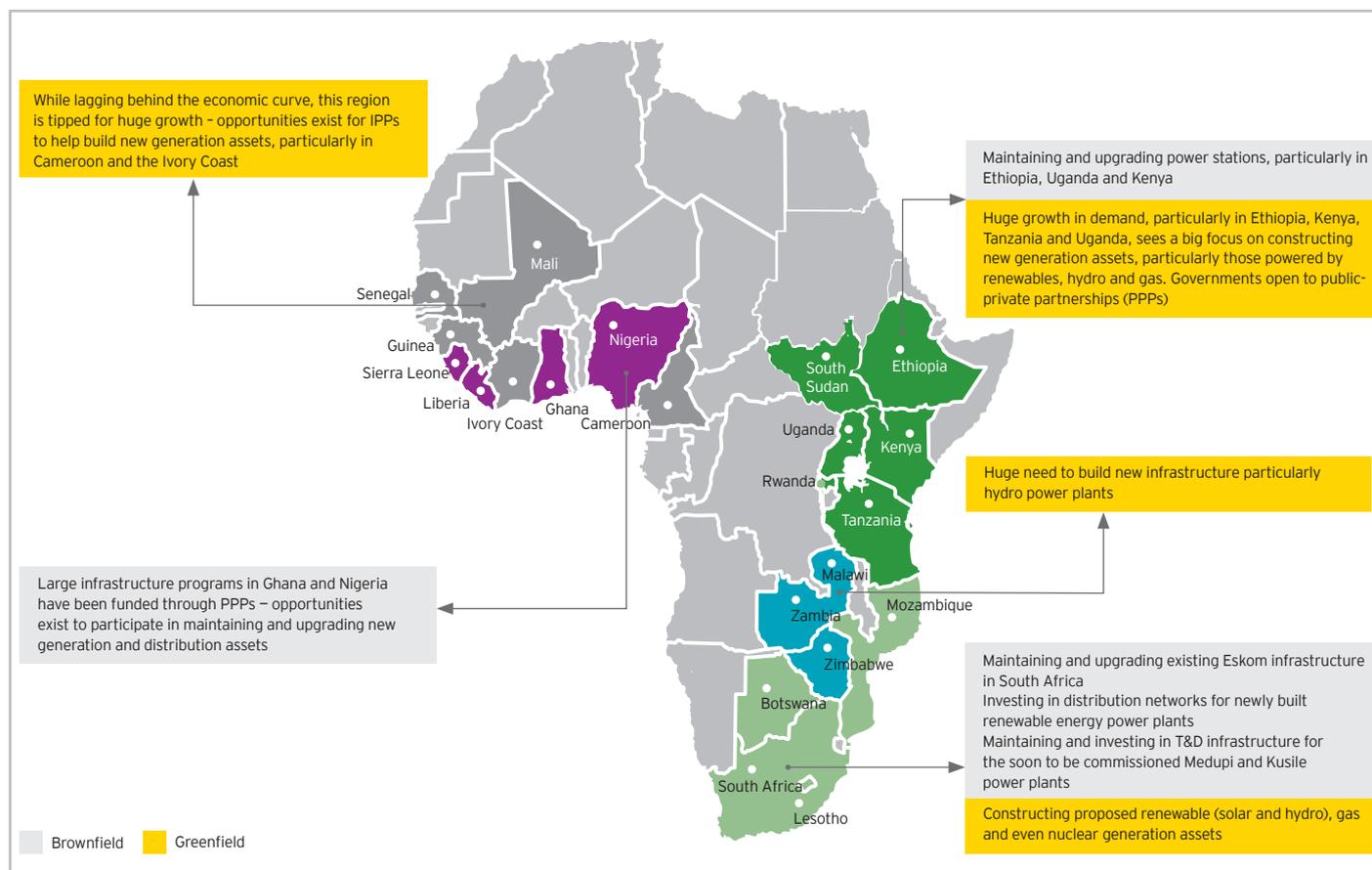
Our on-the-ground perspective pinpoints the best greenfield and brownfield opportunities, highlights where challenges remain and explains how lessons learned from other markets can help grow investment in Africa's energy sector. Report by **Sandile Hlophe**.

This is an exciting time for Africa. All across this vast continent, huge and rapid growth is driving new economic prosperity, unprecedented social change and positioning Africa as one of the world's prime investment targets. Much of the growth is concentrated around increased levels of urbanization – by 2030, more than 50% of Africans will live in cities.¹²

Realizing Africa's potential will depend on a stable and affordable electricity supply. Access to power will stimulate local production, create jobs and attract foreign investment. In my view, the opportunities for P&U companies in Africa are huge and will continue to climb in line with forecasted growth in GDP, population and urbanization across the continent.

Huge greenfield and brownfield opportunities across the continent

Figure 7. Snapshot of African P&U opportunities



12. "African urbanization," Harvard International Review, 23 March 2014.

Shifting investor profile

as technology transforms the sector

While we will continue to see a strong role for European investors, new players from different countries are beginning to challenge the traditional European dominance of Africa. For some time, China has been emerging as a growing force in the continent's energy sector. Now, as technology encourages diversification away from coal-based generation, expect to see more participation from those countries, such as the US and Russia, where expertise in areas such as renewables and nuclear are particularly strong.

Challenges remain

but they may surprise you

Doing business in many African markets now carries fewer risks than found in some Asia-Pacific and European countries. Political stability is increasing across the continent, with most countries now guided by a long-term blueprint for infrastructure development. While investors have more certainty, some key challenges remain:

Lack of liquidity: Few African governments have the ability to finance large-scale energy and infrastructure projects beyond the initial feasibility study stages.

Legislative lag: This lack of liquidity sees many governments keen to partner with the private sector to drive forward big capital-intensive projects. However, in many countries, this desire to encourage private investment is stymied by an absence of any legislative framework to allow private sector participation in the energy sector.

Pricing uncertainty: Even those countries that have addressed issues of financing and private sector involvement may not have put in place a clear pricing mechanism around energy.

Uncertainty around the offtake price of supplying power to the grid is a major stumbling block for investors trying to determine the viability of projects.

These challenges highlight the importance of working with local advisers who can offer on-the-ground insights and help avoid common pitfalls.

Learning lessons

from other global markets

The timing of the African energy sector's coming of age is fortuitous. Reviewing developments in more mature markets allows Africa's governments to take advantage of others' experience, identify best practice and avoid common pitfalls. I believe some of the most relevant lessons learned include:

Partnering with the private sector: Governments will not meet Africa's enormous demand for power without the engagement and investment of the private sector. Many countries have worked with IPPs to improve the stability of their power supply and their wider participation across Africa should be encouraged.

Focusing on renewables: Across the world, governments are increasingly turning toward renewable sources of power generation. Africa's abundance of natural resources, including sunshine, water and gas, makes renewables the smart choice as a source of baseload power. And, in many rural parts of Africa, decentralized, renewable generation may be the only way to deliver electricity to communities.

Leveraging institutional funding: Pension funds and other institutional investors have proven attractive sources of long-term funding in many global energy markets. Ensuring frameworks are in place to welcome and support these investors could help deliver the long-term investment required to meet Africa's power generation and infrastructure needs.

Table 7. Investments announced in 2014 by global investors and international agencies into Africa

Country	Project name	Total value (US\$m)	Current owner
Nigeria	Generate 1GW of solar capacity over the next ten years	30,000	HQMC Korea Ltd
Morocco	Set up 1,386MW coal-fired power plant	2,600	Mitsui: 30%; GDF Suez: 35%; Nareva: 35%
Sub-Saharan Africa	Direct loans, underwriting of debt offerings and equity stakes in energy projects	2,000	Japan
Nigeria	Facilitate development of 10GW of capacity in Nigeria by 2020	1,000	General Electric, US
Guinea	Generation project	700	China
Morocco	Wind farm	545	International Power (UK); Nareva Holding SA (Morocco)
Ghana	Support Electricity Company of Ghana	498	Millennium Challenge Corporation, US
South Africa	Dorper Wind Farm	251	Sumitomo Mitsui Banking Corp.; Dorper Wind Development Pty. Ltd.
Kenya	Construction and operation of the 310MW Lake Turkana wind power project	250	OPIC, US
South Africa	Ka Xu CSP plant in South Africa	246	European Investment Bank, EIB
Ethiopia	Develop 500MW of geothermal capacity	203	World Bank
South Africa	SunEdison Witkop PV Plant	157	SunEdison Green Power Renewable Energy Southern Africa Pty. Ltd.
South Africa	Scatec Solar Linde PV Plant	129	Scatec Solar ASA, Norway
South Africa	Eskom's 100MW Concentrating Solar Power (CSP) plant close to Upington in the Northern Cape	84	European Investment Bank, EIB

“The opportunities for power and utilities companies in Africa are huge and will continue to climb in line with forecasted growth in GDP, population and urbanization across the continent.”



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South African renewables win over investors

Already one of the world's hottest renewable energy markets, South Africa's wave of innovation is now adding to its investment appeal. Report by **Ben Warren**.

South Africa is fast shaping up as a global hotspot for green energy investment. The Sub-Saharan country is rapidly climbing EY's quarterly *Renewable Energy Country Attractiveness Index* (RECAI), reaching an all-time high of 16 in the September 2014 issue. The story behind South Africa's rapid ascent holds valuable lessons, not only for other African countries, but for many of the world's energy markets keen to stimulate investment in renewable generation.

Clarity is king

South Africa has turned around its energy market in a remarkably short amount of time. In 2011, I was part of a South African UK EY team engaged by the South African Department of Energy (DoE) on a project designed to help attract investment in the country's energy sector, particularly its renewable energy market. The project was driven mostly by an urgent need for new generation capacity to meet burgeoning demand but also aimed to reduce South Africa's reliance on coal, advance economic development and create jobs.

With much of this project's capital to come from foreign investors, our first priority was to support the DoE to design South Africa's energy procurement processes to ensure it could compete in a crowded global power and utilities market. We did this based on four key factors:

1. **Clear policy signals:** Investors must see strong, unambiguous signals about a country's national agenda around electrification and renewables, as well as the desire to involve direct foreign investment.
2. **Acceptable financing and risk arrangements:** Governments must put themselves in investors' shoes to ensure that financing arrangements and project risks are acceptable to the private investor. This means thinking through issues such as land permits, credit risk and guarantees and the terms of off-take arrangements before going to market.

1. **Transparent regulation:** Well-developed regulatory regimes and institutions that are stable and transparent are essential.
2. **Public engagement:** Governments must consult with the development and investment communities regularly, even hiring a convention center to present to prospective bidders.

These factors are essential to stamp out the challenges of corruption and confusing policies that scare off foreign investors in any market. Properly implemented and adhered to, these factors will move the objectives farther and faster.

Necessity is the mother of invention

South Africa's reforms have seen phenomenal success, completely transforming the country's energy sector and boosting its economic growth. Apart from rapidly advancing up the RECAI and attracting the world's biggest renewable energy players, South Africa has gained approximately 4GW of new capacity (worth about US\$12b), approximately 55,000 new jobs and has seen the cost of energy drop dramatically. Critically, the changes are sustainable.

I believe that the success of this project, and that of others, including the self-funded rollout of smart meters in the city of Tshwane in South Africa (see callout box), are helping to change perceptions of doing business in Africa's P&U sector. While challenges remain – most notably a lack of human resources and local capital – the continent's desperate need for electrification and lack of traditional centralized transmission infrastructure is unearthing fresh, new solutions that may see more developed markets look to Africa in the future.

Examples of these were seen in late 2013, when 10 clean energy projects developed by West African companies and entrepreneurs worth more than US\$80m were presented to investors as part of a business innovation competition. Innovative approaches are being applied to almost every part of the energy value chain from demand management and automated demand response to voltage optimization, smart metering, financing models and billing verification.

Much of the innovation is around energy storage, a concept which lends itself particularly well to Africa, where distributed energy resources (DER) look set to play a powerful role in meeting electrification needs now and moving forward.

Opportunities in distributed energy

In 2015, I believe it is DER companies that will offer many of the most attractive transactional opportunities for both international and domestic investors. Expect to see private equity players, in particular, seek investments in either the infrastructure or technological capability of these companies before perhaps planning exits or partial exits via Initial Public Offering (IPO) or other means.

An excellent example of this is Actis, a UK-based private equity firm which bought Ugandan distribution company Umeme. Actis embarked upon a significant investment program in new infrastructure and grid connections before selling a substantial stake of the company via an oversubscribed IPO. Listing the IPO in Uganda opened up investment opportunities to local retail and institutional investors, deepening Uganda's own capital pool and strengthening the country's overall economic state.

Long-term lessons

Even those African energy markets that attract initial investment will face challenges in continuing to secure the low-cost long-term capital to finance ongoing infrastructure requirements, and so meet electrification targets while bringing energy costs down. South Africa's success in creating a derisked, stable investment environment that prioritizes renewables and encourages innovation offers valuable lessons for the rest of the continent.

Bold smart metering model

Struggling with endemic problems of electricity theft and long-term debtors, the South African city of Tshwane worked with EY and Total Utilities Management Services (TUMS) to implement one of the world's most innovative smart metering programs.

The city's prepaid smart meter program uses a privately funded business model to enable an accelerated rollout to maximize cost savings and help ensure that customer tariffs need not be raised. The first smart meter was switched on in October 2013, and it is expected that the rollout should be complete by the end of 2016.

Tshwane's groundbreaking approach to smart metering looks set to influence the evolution of smart metering across Africa.

"I believe it is distributed energy companies that will offer many of the most attractive transactional opportunities for both international and domestic investors."



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2015

Transaction outlook

Confidence in economic stability, stronger balance sheets and reforms in key markets provide the ingredients for an active deal-making environment with both utilities and financial investors set to accelerate growth agendas through M&A. We expect 2015 to be another robust year for the transactional landscape. Report by Matt Rennie.

Growing IPP sector to drive M&A

Get set for IPPs – already active investors in P&U – to play an increasingly important role in shaping future M&A within the sector. While low power prices have made unregulated generation unprofitable for some diversified utilities, we believe the recent price recovery is sustainable and will be boosted by further coal plant retirements in 2015. This, coupled with the resulting declining reserve margins in the near term in many regions, point to an active IPP market in 2015, with M&A being the key tool for expansion. In the US, Duke Energy and PPL Corp. have already announced restructuring or sale of their merchant generation businesses and American Electric Power has retained Goldman Sachs to explore options for its 7,923MW merchant generation business.¹³ The power plant portfolio is likely to fetch US\$350 to US\$450 per kilowatt hour, resulting in a sale price from approximately US\$2.8b to US\$3.6b. We expect IPPs and financial investors to compete for these assets in 2015.

13. "Exclusive: American Electric Power Taps Goldman for Plant Sale of Up to \$3.6B," The Street, 06 January 2015, www.thestreet.com/story/13001416/1/exclusive-american-electric-power-taps-goldman-for-power-plant-sale.html

Utilities to consolidate and look for growth outside their home territories

We expect M&A activity to be bolstered by large diversified utilities continuing to streamline operations by focusing on stable regulated assets and consolidating positions through bolt-on acquisitions in high-growth regions. In Europe, utilities' strategies will move from balance sheet repair to focus instead on growth through acquisitions. For example, GDF Suez will invest US\$1.7b in power plant and transmission lines in Chile as part of a push into Latin American energy projects.¹⁴ Also, Enel's Latin American subsidiary has announced it will invest US\$8.7b over five years and Snam has indicated its interest in participating in the consolidation of the Italian market. Iberdrola is increasingly looking to expand its presence in the Americas, particularly the US and Latin America. CEZ's management has suggested growth opportunities would be a priority in 2015. These plans, together with potential multi-billion dollar privatizations, will create a strong deal pipeline in the coming months.

Investments to move up the value chain as utilities seek to control the supply chain

Utilities look set to shift some investment focus toward vertical integration by acquiring midstream and upstream assets, as evidenced by Dominion Resources' 2014 purchase of Carolina Gas Transmission (CGT) from SCANA Corporation for US\$492.9m. Similarly, Duke Energy is considering investment in the production of shale gas as its power plants become more dependent

14. "GDF Suez to Invest \$1.7 Billion in Chile Power in Latam Push," Bloomberg, 17 December 2014, <http://www.bloomberg.com/news/2014-12-16/gdf-suez-to-invest-1-7-billion-in-chile-power-in-latam-push.html>

on the fuel.¹⁵ In 2015, expect this trend to continue in the US as utilities seek to hedge against commodity price volatility, as well as in the Asia-Pacific and Europe. Japanese utilities are acquiring shares in LNG projects across the globe, particularly in the US and Australia, while Indian utilities such as NTPC and Tata Power are locking in coal supplies by investing in coal mines abroad.

YieldCos to ride high on the back of better yield and dividend growth

YieldCos continue to drive M&A activity as parent companies ensure they have a steady pipeline of assets with drop-down potential. NRG Yield announced twin acquisitions (worth a cumulative US\$2.2b) from NRG Energy during the year which saw the company raise its 2015 EBITDA guidance by 20%. The success of NRG Yield has inspired others – in April, NextEra Energy announced the sale of shares in a yield vehicle for its renewable power plants while Sempra Energy has indicated it will evaluate YieldCo structures as it seeks to leverage its diversified asset portfolios.¹⁶ Altogether, North American energy companies have raised about US\$1.8b from spinning off YieldCos in IPOs in the past year, and we see several more companies looking at possible launches in the next 12 months. While the majority of assets acquired by YieldCos were from parent companies, a spate of recent deals suggest they are now purchasing assets from third parties, a continuing trend which we expect to accelerate M&A activity in 2015.

15. "Duke Energy Sees Potential Shale Gas Investment," Bloomberg, 12 November 2014, <http://www.bloomberg.com/news/2014-11-11/duke-energy-sees-potential-shale-gas-investment.html>

16. "2015 yieldco decision for Sempra," Recharge news, 04 November 2014, www.rechargenews.com/solar/1382487/2015-yieldco-decision-for-Sempra



Competition for contracted renewable assets to grow as buyers look for stable earnings

As more countries implement policies in support of renewable energy, we expect heightened M&A activity in this space. In North America, despite uncertainty around Production Tax Credits, international investors are still expected to be attracted by cash-flow yielding contracted wind assets as well as the opportunity to operate utility-scale solar projects. We expect that growth over the next two years will be driven by a push to get projects into service in time to qualify for the current 30% federal investment tax credit before it drops to 10% from 31 December 2016. A surge in new utility-scale installations should trigger an increase in M&A activity since many projects are being developed by panel manufacturers who might exit at good valuations.

Japanese trading houses such as Mitsubishi, Marubeni Corp. and Mitsui are likely to significantly ramp up their renewable energy investment activities in the coming years to accelerate their industrial strategies. Trading houses typically invest in renewable energy assets to gain experience and build supply chains in target markets. Small municipal utilities, such as those in Germany and Switzerland, also are expected to become active in renewables, driven by political and consumer pressure. Many municipal utilities are working toward targets of sourcing 100% of their energy from renewable sources.

Emerging markets become integral to global investors' growth agendas

The urgent need for increased levels of electrification will see emerging markets present significant opportunities for global investors. In Africa, 8GW of additional capacity (worth about US\$8b) is expected to be installed in the Sub-Saharan region in 2015, while in Mexico, energy reforms are already attracting several players into what is anticipated to be the world's next big wind market. Mexico's federal energy secretariat (Sener) is aiming to achieve 12GW national capacity by the end of 2020,¹⁷ a target which will require around 1.5GW of new capacity annually over that period. We expect investors from Europe and the US to participate in most of these developments.

India also will offer significant investment opportunities, both in distressed generation asset sales and the construction of new transmission and distribution infrastructure. The country's solar market looks set to expand, with the Government announcing that US\$110b of investment will be required to install the 100GW of solar power planned in the next five years. More than half of this is likely to be funded by global players, with big financial players including Morgan Stanley, Goldman Sachs and Standard Chartered currently evaluating investment opportunities in the sector.

We also expect to see Latin American markets, particularly Chile and Brazil, to be top investment priorities as governments progress investor-friendly policies to attract capital.

Sector to attract diverse set of buyers led by financial investors; consortiums to become popular

Utilities will need to compete with financial buyers that are looking to invest in the sector. Pension funds are increasingly viewing renewable energy as viable long-term investments. PensionDanmark, a Danish not-for-profit labor market pension fund, invests 5% of its US\$21b of assets under management directly in renewable energy infrastructure, and is looking to increase this to 10% by allocating a further US\$1.5b over the next four years. We expect to see more consortiums bid for large assets as this approach can bring greater expertise and share risks. Recently, we saw a consortium of four Danish pension funds – PKA, Industriens Pension, Lærernes Pension and Lægernes Pensionskasse – partner with DONG Energy to acquire a 50% stake in a German offshore wind project for US\$812m.

2015 is likely to see a rise in infrastructure fund investments, primarily into renewable energy, pipelines and utilities and transportation assets. US-based private equity firm KKR & Co. is seeking US\$2b for a second fund to make infrastructure investments globally. Japan's Government Pension Investment Fund has announced investment of as much as US\$2.7b in infrastructure over the next five years. Similarly, private equity funds that seek higher returns, and hence assume greater risk, are likely to invest in the development and construction stage projects.

17. "Energy reform triggers wind take-off in Mexico," Wind Power Monthly, 31 July 2014, www.windpowermonthly.com/article/1305163/energy-reform-triggers-wind-take-off-mexico

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