Overview

Convergence and renewables drive surge in dealmaking

Welcome to the annual year-end edition of *Power transactions and trends (PTT)*, where we review deal activity within the power and utilities (P&U) sector during 2015 and look ahead to the trends and drivers that will shape this year’s mergers and acquisitions (M&A).

2015 ended as it began, recording strong deal value that totaled US$200b – a six-year high and a 13% jump on 2014. The increase in transactions reflects how utilities and investors are using mergers and acquisitions (M&A) as a strategic tool to adapt to changing dynamics in the sector. We saw several key themes behind the year’s transactions, many of which we had forecast in our 2014 year-end edition of *PTT*:

**Convergence and midstream/upstream investment:** This was the biggest driver of transactions by utilities seeking growth in 2015. Whether through electric and gas (mega)mergers in the US, convergence with telecommunications companies (telcos) ahead of retail competition in Japan or an increase in technological partnerships in Europe, utilities are considering diverse avenues for growth and the preservation and optimization of capital amid the global economic downturn. Regulated utilities revealed themselves as safe harbors for capital during 2015, as stable cash flows and opportunities to expand customer bases led the way to strong network sale multiples, as evidenced by Duke Energy’s US$6.7b acquisition of Piedmont Natural Gas.

**Contracted renewable energy assets in demand:** Renewables continued to capture the lion’s share of deal activity in 2015, as investors moved to add wind and solar assets to comply with regulations and reduce exposure to volatile coal and gas. China introduced several policies in favor of gas and renewables in the power sector, ensuring its continued strong presence on global renewable investment league tables.

**Emerging markets attracted investment:** Utilities in Europe and the US, faced with continuing flat demand, looked for growth in emerging markets where rapid demand growth and electrification agendas are beginning to attract foreign attention. Investors are increasingly drawn to countries in Sub-Saharan Africa, as well as Mexico, Vietnam and Indonesia. Vietnam and Indonesia alone will require the construction of around 90 GW of new capacity over the next 10 years, requirements that dwarf the organic investments expected in almost all developed markets.

**Disruptive trends become mainstream:** In 2015, we saw energy storage, and its supporting IT integration applications, move from being a private equity play to a mainstream investment for utilities, many of which formed partnerships with technology companies and telcos. We expect strong continued growth in this segment in 2016.

**Energy reforms drive opportunities:** Unbundling and privatization continue in many energy markets. In Africa, governments are progressing reforms to attract investment for infrastructure build while those in the Middle East are opening doors to private and foreign capital in response to the liquidity crunch caused by falling oil prices. UAE, Saudi Arabia, Egypt, Morocco and Kenya are some of the countries that have announced concrete intentions to liberalize their markets and focus on new generation capacity. For more details, visit: ey.com/energyreform.
Electrification, reforms and disruptive technology will drive 2016 transactions

We expect many of these trends to continue in 2016, which will be another robust year for the global P&U sector. While the US federal rate hike, continuing tough conditions in Europe and a slowing Chinese economy are likely to impact investments and sector valuations, utilities are now accelerating growth agendas and appear keen to add assets that can be rewarded by investors. Sentiment toward renewables will strengthen on the back of COP21, while gas demand will rise across geographies amid depressed prices. We expect to see more rebalancing of roles and assets in developed countries as the gradual transformation of these markets continues.

The retailer-only model continues to struggle for sustainability, with the continual push for scale and “cost-out” proving difficult for those caught between niche and large-scale operations. We expect these mid-range retailers (with between 500,000 to 3 million customers) to begin seeking strategic acquisitions to secure a place in the value chain that relies, not just on low margins and high quality service, but on controlling or owning these assets. Our sense is that this will revolve around load management capabilities associated with storage, metering and meter data. Energy technology, especially battery storage and connected homes, and a growing trend by consumers toward grid independence will also set off a new wave of M&A, with technology companies and utilities forming partnerships to retain their roles in the value chain.

We think it’s too early to start seeing the impact of batteries and solar on network valuations, which we expect to rise and then peak over the next 18 months as the long-term nature of distributed energy becomes clearer. Valuations in the generation/IPP space are likely to remain subdued in 2016, despite the prospect for large numbers of transactions in this segment.

In emerging markets, particularly in Sub-Saharan Africa, Vietnam and Indonesia, electrification and reforms will boost transactions involving financial investors, advisory firms and traditional utilities, often in joint ventures designed to best capitalize on available opportunities. Ongoing reforms in Mexico, Saudi Arabia and Japan will provide a secondary but significant source of investment and transactional activity.

While ongoing economic uncertainty in many markets may color some P&U deals in 2016, EY’s recent Capital Confidence Barometer revealed optimism from P&U executives regarding future M&A activities. We expect this confidence and the strong trends currently shaping our industry to combine to deliver another blockbuster year for the global utilities industry in 2016.
**Chart 1**

*Global P&U deal value and volume (Q4 2013–Q4 2015)*

<table>
<thead>
<tr>
<th>Year</th>
<th>Q4</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
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<tr>
<td>2013</td>
<td>35.5</td>
<td>28.2</td>
<td>58.1</td>
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<tr>
<td>2014</td>
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<td>21.2</td>
<td>18.0</td>
<td>75.5</td>
<td>73.5</td>
</tr>
</tbody>
</table>

Source: EY analysis based on Mergermarket data

**Chart 2**

*Global P&U deal value by region (US$b, Q4 2013–Q4 2015)*

- **Americas**
- **Europe**
- **Asia-Pacific**

Source: EY analysis based on Mergermarket data

- **US$200b**
  - Total deal value for 2015, a six-year high
- **US$73.5b**
  - Q4 2015 deal value
- **US$42.1b**
  - Asia-Pacific deal value for Q4 2015, the highest regional deal value of the quarter
- **US$67.9b**
  - Total transmission and distribution (T&D) deal value for 2015
- **30%**
  - Average premium on historical valuations for regulated T&D companies across the US, Europe and Asia-Pacific

US$200b total deal value for 2015, a six-year high. US$73.5b Q4 2015 deal value. US$42.1b Asia-Pacific deal value for Q4 2015, the highest regional deal value of the quarter. US$67.9b total transmission and distribution (T&D) deal value for 2015. 30% average premium on historical valuations for regulated T&D companies across the US, Europe and Asia-Pacific.
Europe’s transforming power and utilities (P&U) market is prompting many companies to use strategic dealmaking to transition to new business models and explore new opportunities, such as energy services and customer solutions.

Europe’s transforming P&U market is prompting many companies to use strategic dealmaking to transition to new business models and explore new opportunities, such as energy services and customer solutions. While the region’s utilities experienced a relatively sluggish 2015, due mostly to a lack of large corporate divestments and privatizations, we expect activity to increase in 2016 as utilities continue to adapt to changing conditions. This is reflected in EY’s recent Global Corporate Divestment Study, where the majority of P&U respondents said they expect the number of strategic sellers to increase over the next year.

- **US$39b**
  - total 2015 deal value, 19.5% decline on 2014

- **US$15.3b**
  - in total Q4 deal value, 132% quarter-on-quarter rise in transactional activity

- **61%**
  - of total Q4 deal value contributed by renewables

- **41%**
  - premium on historical average European transmission and distribution (T&D) valuations
Q4 2015 trends:

- **Renewables boosted, valuations impacted** – Much of the boost in Q4’s deal activity was due to an increase in the volume of clean energy acquisitions by strategic buyers. Renewable transactions contributed 61% to the total regional deal value in Q4, with Germany, Italy, Spain and the UK emerging as the key hotspots. While some financial investors are taking a bullish approach to these assets – Infinis Energy was acquired by Terra Firma Capital Partners for US$270m, a 41% premium to the closing price one day prior to the announcement – others such as Macquarie and Blackstone are exploring monetizing these assets to take advantage of high valuations driven by rapid growth in renewable energy use. The interest in renewables comes as investor sentiment in the thermal power segment declines. As gas and coal plants are pushed out of the merit order, the valuations of utilities with high exposure to this type of generation have fallen, evidenced by a 60% reduction in RWE’s share price over 2015. In response, RWE plans to launch an IPO of NewCo in late 2016, which will contain attractive renewables, networks and energy services assets, to capitalize on the rapid growth in renewables and to raise capital for the parent company.

- **Subsidy withdrawal creates ripples among clean energy developers** – Despite the growth in renewable energy deals, declining subsidies and auction mechanisms are moving the European sector into a new phase. In the UK, discontinuation of government support for onshore wind and solar saw some early casualties. RWE decided to pause or shelve US$1.4b of onshore wind projects while Renewable Energy Generation (REG) announced it will sell its entire business to US-based BlackRock for US$97.4m – an attractive buyout given REG share prices have dropped more than 50% since 2014. In October 2015, two solar panel firms, Mark Group and Climate Energy, filed for insolvency, blaming modifications in solar subsidies.

- **Utilities diversify and divest** – With record low wholesale prices, shrinking financials and rising impairments, utilities are turning their focus to energy services and downstream supply businesses. Centrica, for example, has identified five businesses – energy retail supply; home and business energy services; distributed energy; the connected home; and energy marketing and trading – that will drive its long-term growth prospects. We will see further convergence of utilities and technology firms as we move through 2016. As utilities restructure, large divestments often occur, such as the region’s biggest transaction of the year – Fortum’s sale of its Swedish distribution business to a Canada-based consortium of financial investors for US$7b. Throughout 2015, E.ON alone divested assets worth US$2.06b while RWE is currently divesting from its oil and gas exploration and production unit, DEA.

- **Outbound investments in emerging markets continue** – Opportunities created by market reforms are driving utilities to invest in emerging markets. Enel has allocated 41% of its total capital expenditure during 2016–19 to Latin America. In other examples, Lightsource plans to invest US$3b in India to set up solar plants totaling 3 GW of capacity, while EDF will invest US$2b in the emerging markets of America and Africa.
Transaction snapshot

Corporate investors target renewables and T&D assets

Renewable energy deals worth US$9.4b drove a 132% increase in overall deal value in Europe during Q4 2015. Much of the increase in mergers and acquisitions (M&A) in the clean energy space comes as subsidies for solar and onshore wind power are withdrawn, a scenario which may result in lower renewable capacity coming online in the future.

This has driven interest in existing renewables from strategic investors, keen to acquire clean energy assets to comply with environmental mandates, and prompted some utilities such as RWE and Enel to increase their focus on renewables, to compensate for losses in conventional generation. This was illustrated in November 2015, when Enel SpA announced the corporate integration of Enel Green Power through a partial non-proportional spin-off worth US$3.3b. For financial investors, clean energy assets with long-term power purchase agreements (PPAs) offer stable returns that are otherwise not achievable in a negative demand-supply scenario. These investors contributed US$2.9b of total deal value in Q4, with activity across the region led by firms from Australia, the UK and the US. In one notable example, Australia-based Macquarie Infrastructure and Real Assets (MIRA) announced it would acquire a 49% stake in an Italy-based renewable energy company, Hydro Dolomiti Enel Srl, from Enel for US$360m. We expect continued strong M&A activity in the renewables segment.

Debt-laden utilities are continuing to optimize their asset portfolios as subdued commodity prices put pressure on their financial positions. Many companies are keen to sell stakes in non-core assets to institutional fund investors. In November, Enel Green sold its renewable energy assets in Portugal to First State Wind Energy Investments for US$955m in a bid to reduce its US$583m debt. In contrast to Q3, corporate investors, primarily from Germany and Italy, took the lead, pumping around US$12.4b into the European energy market. While RWE completed the sale of DEA Deutsche Erdoel AG, its exploration and production (E&P) business unit, to Russia’s LetterOne for US$5.7b in early 2015, E.ON SE agreed to offload its E&P business to DEA for US$1.6b in October 2015. Centrica also plans to sell its US$1.3b oil, gas and wind farm assets by 2017.

Valuations snapshot

Renewables and regulated assets maintain above average valuations; generation assets trade at historic lows

Utilities with exposure to thermal generation continue to trade at or below book value. A number of major European utilities have either accounted for huge impairment charges (E.ON SE’s US$9b charge in Q3), or have hinted at write-offs in 2016. The increased use of renewable energy across the region, along with energy efficiency programs, are depressing power prices and impacting the margins of power generators. Europe is flooded with cheap coal, which, in addition to the rise of renewables, has reduced demand for gas. Significant new LNG supply in the US and Australia will further weigh down gas prices. With these factors in mind, we do not expect a significant increase in valuations for generation assets (coal, gas and nuclear), given that commodity prices are expected to remain low and any rebound in demand may be mitigated by ongoing energy efficiency measures.
According to Moody's, earnings of utilities in central and north Europe are likely to decline by a further 7% percent in 2016, led by heavy reliance on conventional coal, gas and nuclear generation. This trend was seen in 2015, with RWE and UK-based Drax Group among the lowest performers on the STOXX® 600 Utilities Index. The $/kW value for deals in the generation segment has been trending downward since Q1 2014. However, low interest rates and monetary easing may support utility share prices, helping them to reduce debt and potentially easing the downward pressure on generation asset valuations.

The uptake in T&D asset activity highlighted in our Q3 edition continued during Q4, with M&A worth more than US$3.4b occurring in this segment. This has boosted valuations with key European T&D utilities trading at a 41% premium to the region's historical averages. One potential deal worth noting is Australia-based Macquarie’s plans to sell German gas grid Thyssengas, which could fetch as much as US$656m. With significant investment required in T&D infrastructure and interconnectors in the region, we expect robust earnings growth for these utilities in 2016, further increasing their valuations.

### Top five deals, Q4 2015

<table>
<thead>
<tr>
<th>Announcement date</th>
<th>Target</th>
<th>Target country</th>
<th>Bidder</th>
<th>Bidder country</th>
<th>Deal value (US$m)</th>
<th>Rationale</th>
<th>Segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 November</td>
<td>Enel Green Power S.p.A.</td>
<td>Italy</td>
<td>Enel S.p.A.</td>
<td>Italy</td>
<td>3,363</td>
<td>Operational and management synergies support an increased focus on renewables</td>
<td>Renewables: Wind, Solar, Bioenergy</td>
</tr>
<tr>
<td>16 October</td>
<td>Verbundnetz Gas Aktiengesellschaft (VNG)</td>
<td>Germany</td>
<td>Energie Baden-Württemberg AG (EnBW)</td>
<td>Germany</td>
<td>2,082</td>
<td>Part of restructuring between EnBW and EWE; deal to double EnBW’s gas business</td>
<td>T&amp;D: Gas</td>
</tr>
<tr>
<td>14 October</td>
<td>E.ON E&amp;P Norge AS</td>
<td>Norway</td>
<td>DEA Deutsche Erdol AG</td>
<td>Germany</td>
<td>1,600</td>
<td>Improves E.ON’s overall financial position and provide flexibility for ongoing strategies</td>
<td>Other: E&amp;P</td>
</tr>
<tr>
<td>02 October</td>
<td>Grupo Iberwind</td>
<td>Portugal</td>
<td>Cheung Kong Infrastructure Holdings Limited; Power Assets Holdings Limited</td>
<td>Hong Kong, China</td>
<td>1,101</td>
<td>Enables buyers to expand existing renewable energy platform globally</td>
<td>Renewables: Wind</td>
</tr>
</tbody>
</table>

Source: EY and Mergermarket analysis
**Renewable energy** generation valuations are directly linked to a) incentives/subsidies and regulatory policies that support future builds, b) the development stage of the plant (investors have preferred operational assets rather than assets under construction), c) whether offtake agreements/PPAs are in place, and d) strong investor interest driven by stable cash flows. Throughout the year, contracted solar and wind assets remained most sought after due to their ~8-9% returns compared to ultra-low interest rates. Wind energy assets in Germany and the UK attracted investors and recorded nine deals worth US$1.4b in Q4. Spanish and Italian utilities, including renewables-focused Iberdrola and Endesa, outperformed the market in 2015, and are expected to report strong earnings growth in 2016.

There is a notable contrast between onshore and offshore wind assets transaction valuations. Several investors snapped up onshore wind assets in the UK at cheap valuations during 2015, as developers grew nervous over impending subsidy cuts. In contrast, offshore wind witnessed strong bidder interest in response to regulatory assurance of guaranteed returns aimed at accelerating growth. In November 2015, Enbridge Energy bought a 24% stake in the 400 MW Rampion offshore wind project for US$573m, a $/KW multiple of 5,968. As forecasted in our Q3 edition, offshore assets backed by regulated utilities have attracted investments from financial investors. In October 2015, RWE Innogy closed financing for its £1.5b (around US$2.1b) 336 MW offshore wind farm, raising funds from UK Green Investment Bank (GIB), Siemens Financial Services and Macquarie Capital.
Deal momentum to increase as utilities focus on high growth businesses and regions

Deal activity across the European P&U market is expected to pick up pace in 2016. Key factors driving transactions will include:

1. **Integrated utilities will shed low growth assets** – We do not expect wholesale electricity prices to rebound any time soon, and electricity demand is likely to remain weak amid a decoupling of economic growth and power consumption. These factors, along with the growth in distributed energy, energy efficiency measures and deployment of battery storage devices, are likely to result in further write-downs of thermal capacity and continued divestment of low-growth assets.

2. **Spotlight on new downstream revenue opportunities** – Meanwhile, as the demand-side management of energy gains prominence, utilities will explore new downstream revenue streams. For example, in July 2015, SunEdison bought Mark Group to offer energy solutions and services to customers. In September 2015, E.ON acquired a stake in energy efficiency company Enervee, to develop a platform to meet the energy efficiency needs of its European customers. Watch for this trend to pick up as low barriers to entry prompt more partnerships between utilities and other industry players.

3. **Convergence between utilities and other sectors** – In line with a new focus on different energy opportunities, P&U companies will increasingly join forces with financial and technology firms to capitalize on synergies and shared expertise. In January 2016, Fuji Electric’s European subsidiary, active in fuel cell commercialization, acquired a 70% stake in N2telligence, a German fuel cell company. As highlighted in our Q3 edition, financial investors, who have historically preferred operational renewable assets to better manage risks, are now also partnering with utilities in assets under construction.

4. **Focus on emerging economies and energy reform** – The hunt for growth will also encourage diversification into high-growth emerging markets, such as the Middle East, Asia and South America. EDF plans to double the proportion of its assets outside Europe to at least 10%, and has already announced it will invest US$2b in new emerging markets including Brazil and African countries. Meanwhile, energy reforms in Eastern Europe will also bring new assets to market and open opportunities for investment.

5. **Regulated and renewable assets exchange hands, with financial investors emerging as key buyers** – Despite subsidy withdrawals in several countries, it seems unlikely that there will be a significant drop in the long-term attractiveness of renewables. An environment of low and volatile returns for thermal assets, and ambitious renewable energy targets, will continue to keep the interest of foreign power groups, infrastructure funds and institutional and state-backed investors.
Italy

Deal value | Deal volume | Capital outlook
--- | --- | ---
US$7,024m | 23 | With a planned phaseout of coal by 2025, incentives to invest in gas and renewable energy may be needed to replace lost capacity. In 2015, the UK renewable energy segment saw deals worth US$2.3b during 2015. We expect the trend to continue as investors look to wind assets for attractive returns.

UK

Deal value | Deal volume | Capital outlook
--- | --- | ---
US$4,744m | 44 | With a planned phaseout of coal by 2025, incentives to invest in gas and renewable energy may be needed to replace lost capacity.

Eastern Europe

Deal value | Deal volume | Capital outlook
--- | --- | ---
US$1,271m | 12 | Market reforms in several Eastern European countries will provide investment opportunities in 2016. Watch for strong support from multilateral agencies in countries such as Serbia, Bulgaria and Ukraine, as they move toward liberalized electricity and gas markets.

Germany

Deal value | Deal volume | Capital outlook
--- | --- | ---
US$5,960m | 29 | We expect more impairments and mothballing of thermal capacity in the wake of depressed energy prices – year-ahead power fell 14% in 2015 to the lowest in more than a decade. Expect more M&A in renewables, as large utilities seek to improve earnings through reducing their exposure to volatile coal and gas.

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Deals reach a six-year high driven by China's domestic and outbound activity

The Asia-Pacific sector is fast becoming the world's most exciting, with massive activity in China, reforms in many markets, electrification agendas and a focus on renewables driving a surge in mergers and acquisitions.

The power and utilities (P&U) sector in the Asia-Pacific is fast becoming the world's most exciting, with massive activity in China, reforms in many markets, electrification agendas and a firm focus on renewables driving a surge in mergers and acquisitions (M&A) during 2015 – deal value increased 100% over 2014, to reach US$74.1b.

- **US$42b** total deal value for Q4
- **US$74.1b** total deal value in 2015, double the 2014 total
- **US$19.1b** deal value in renewables, an increase of 24 times the Q3 value
- **22%** premium on historical averages for regulated transmission and distribution (T&D) valuations
Q4 2015 trends:

- **Chinese outbound activity continues to rise:** Dealmaking in China dominated much of Q4 and 2015 as a whole, contributing US$51.7b or 69% to the total regional deal value for the year. As the Chinese economy slows, many larger utilities were prompted to buy smaller utilities to increase their customer base and bring operational synergies. While activity in the first half of 2015 focused on consolidation in the conventional generation and water and waste segments, the latter half of the year witnessed a shift toward building renewable asset portfolios – over US$20b worth of transactions took place in the Chinese renewable energy sector in 2015. China Yangtze Power’s US$12.5b acquisition of Jiangsu Sanxia Jinshajiang Chuanyun Hydroelectric Power from China Three Gorges Corporation, Sichuan Energy Investment Group and Yunnan Energy Investment Group, remained the largest deal in the region during the year. The largest outbound deal was China General Nuclear Power’s acquisition of Malaysia-based Edra Global Energy Berhad for US$2.3b. Altogether, Chinese state-owned utilities acquired overseas assets worth US$5.6b, primarily in Asia-Pacific countries.

- **Renewable energy transactions gain momentum:** Q4 2015 hosted renewable energy deals worth US$19.1b, a six-year high. While Chinese domestic activity dominated this segment, India’s ambitious renewable energy targets, rising demand and favorable regulatory environment are also attracting foreign investors, such as Abu Dhabi Investment Authority and GIC Private Limited, a Singapore-based sovereign wealth fund. A number of clean energy businesses in India, such as ReNew Power Ventures and Welspun Renewables, have been challenged by debt and are now exiting at relatively higher valuations to repay loans.

- **Energy reforms and unbundling:** In addition to its UDAY (Ujwal DISCOM Assurance Yojana) scheme aimed at improving the financial situation of state-owned distribution companies (discoms), India implemented other power sector reforms in 2015 focused on clean energy, better regulation of discoms and faster rollout of investments. The Indian energy industry generally views UDAY as a positive development and already around 15 states have joined with the government to implement the scheme, opening up investment opportunities in smart metering, energy efficiency, and modernization of grid infrastructure.

Reforms are also progressing in Pakistan where investment opportunities are being created through privatizations and plans to roll out smart meters in major cities and industrial and commercial areas. In Australia, it was the US$7.4b privatization of state-owned electricity network TransGrid that contributed most of that country’s deal value in Q4. For more details on energy reform, click [here](#).

### Chart 8
Asia-Pacific deal value and volume
(asset and corporate level deals, Q4 2013-Q4 2015)

<table>
<thead>
<tr>
<th>Year</th>
<th>Q4</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Total deal value (US$b)</th>
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<td>2013</td>
<td>12.0</td>
<td>4.4</td>
<td>7.9</td>
<td>4.9</td>
<td>15.2</td>
<td>42.1</td>
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<tr>
<td>2014</td>
<td>10.9</td>
<td>9.3</td>
<td>11.9</td>
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</table>

Source: EY analysis based on Mergermarket data

### Chart 9
Asia-Pacific deal value by segment
(US$b, Q4 2013-Q4 2015)

<table>
<thead>
<tr>
<th>Year</th>
<th>Q4</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Generation</th>
<th>T&amp;D</th>
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<td>11.9</td>
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Source: EY analysis based on Mergermarket data
Transaction snapshot
M&A reaches new high despite economic slowdown in China

It was a strong year for the Asia-Pacific with deal value reaching US$74.1b – double 2014’s total and a new seven-year high. Activity was dominated by China, despite a slowdown in the country’s economic growth. China contributed the biggest deal of the quarter and the year – Yangtze Power Company’s (CYP) US$12.5b acquisition of hydropower assets from its parent company, China Three Gorges. The transaction highlights the prominence of renewable energy deals in China’s Q4 activity where hydro and other clean energy assets worth US$15.6b changed hands.

We expect these assets to remain attractive and demand higher premiums as Chinese utilities seek to meet the targets and mandates of the Paris Climate Change accord. However, a disconnect between the efforts of provincial authorities to meet energy needs and stimulate economic growth, and China’s overall energy requirements means that more coal-fired plants have been approved and will come online.

Throughout the region, corporate deal value hit a six-year high (US$27b), with much M&A taking place within domestic markets. Financial investors, particularly those based in Australia, China and Singapore, made their presence felt in Q4, doing deals worth more than five times...
their contribution in the previous quarter. Many of these deals involved regulated grids and renewable energy assets, with the biggest of these being the US$7.4b acquisition of Australia’s TransGrid by a consortium of domestic and global fund managers and private equity investors. Another notable corporate deal was the acquisition by the Australia-based Infrastructure fund of Colonial First State Global Asset Management of New Zealand gas transmission and distribution assets for US$853m, a premium of more than 10 times the enterprise value. Gas is expected to play an increasingly important role in New Zealand’s generation mix as large power plants are retired.

Generation-related deals reflected the downward trend on these assets’ valuations, primarily driven by stagnant demand growth in China, and rising renewables capacity putting pressure on power prices. In the past six years, average valuations have plummeted to 56% of their original value. As the emphasis on clean energy continues, we expect this trend to continue. One of the more notable deals within the generation segment during Q4 was the sale of Australia’s largest coal-fired power station, 1,320 MW Vales Point, for just AUD$1m (approximately US$720,000) in November 2015 (see our interview with Vales Point’s buyer Trevor St. Baker on page 18).

Valuations snapshot
Macro and regulatory developments give mixed valuations signals

The Asia-Pacific P&U sector is currently shaped by massive, rapid growth in power generation capacity, ambitious electrification agendas and the need to better integrate renewable energy to the grid. These trends are fuelling a significant expansion of the region’s regulated transmission and distribution (T&D) sector with China and India expected to see the world’s biggest network expansions to 2020. In most Asia-Pacific countries, the T&D segment is regulated with fixed returns, thus ensuring stable cash flows and limited competition. Until recently, Australia was the only country in the region where privatization offered major acquisition opportunities but this looks set to soon change as energy reforms gather pace in India and China. Currently, T&D companies in the region are trading at a P/E multiple of 14.6x of FY2 EPS, implying a 22% premium on historical averages. Utilities in China and Australia have commanded particularly high premiums, reflecting the perceived quality of these assets.

There is little doubt that, given enough time, the valuations of T&D assets, as well as generation assets, will be impacted by the growing penetration of disruptive technologies such as solar rooftop and battery. Already, energy efficiency measures and demand response programs are reducing electricity demand. For example, annual energy consumption in Australia’s eastern states fell by 7% between 2009 and 2014, despite the Australian economy growing by 13%. Many in the industry believe that 2016 will be a critical year that reveals more about the timing and degree of impact of these disruptive technologies on valuations.

Power generators and IPPs, currently trading at a discount of 15% on historical averages, have continued to attract low valuations due to stagnant demand growth in China, plateaued electricity sales in Japan, falling wholesale power prices in India and surplus capacity in several economies. Conditions will remain tough in 2016, as solar parity puts pressure on power prices. In India, the recently launched UDAY scheme, if successful in improving the financial performance of distribution companies, may help these companies free up their balance sheets, allowing generators to see increased offtake of electricity and faster payment. This positive impact of operating leverage could increase generation valuations.

Regulated T&D

Chart 10
Average price/earnings (P/E) trading multiples for select T&D utilities
(on FY2 consensus EPS estimates, 2010-Q4 2015)

<table>
<thead>
<tr>
<th>Month</th>
<th>Average</th>
<th>Max</th>
<th>Min</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
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<tr>
<td>Oct 15</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Sources: Bloomberg, EY analysis

Generation and IPPs

Chart 11
Average enterprise value/earnings before interest, taxes, depreciation and amortization (EV/EBITDA) trading multiples for select IPPs
(on FY2 consensus EBITDA estimates, 2009-Q4 2015)

<table>
<thead>
<tr>
<th>Month</th>
<th>Average</th>
<th>Max</th>
<th>Min</th>
</tr>
</thead>
<tbody>
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<td>10.4x</td>
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<td>7.1x</td>
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<tr>
<td>Mar 11</td>
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<tr>
<td>Sep 15</td>
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</tbody>
</table>

Sources: Bloomberg, EY analysis

Integrated and diversified

Chart 12
Average EV/EBITDA trading multiples for select diversified utilities (excluding Japan)
(on FY2 consensus EBITDA estimates, 2007-Q4 2015)

<table>
<thead>
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<th>Month</th>
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<tbody>
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<td>Oct 15</td>
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</tbody>
</table>

Sources: Bloomberg, EY analysis

Renewable assets, supported by clean energy mandates, continue to attract interest from investors, who pumped US$19.1b into this segment in Q4, primarily in China and India. Strong government support for renewables across the region makes this market particularly attractive to foreign players whose interest is pushing up valuations. In April 2015, China-based Chongqing Tong Jun Ge acquired CECEP Solar Energy Co for US$2.5b at an FY1 EBIT multiple of 20.9. In some other notable deals in October 2015, GE Energy Financial Services acquired an undisclosed equity stake in Welspun Renewables Energy while Abu Dhabi Investment Authority (ADIA) and Goldman Sachs invested US$265m in Repower, and GIC Private Limited acquired a majority stake in Greenko for US$251m.

In 2016, we expect continued strong interest in Indian renewables from both domestic and foreign investors keen to add contracted assets to their portfolio.

Integrated and diversified utilities in Japan have traditionally been highly valued because of their stable, low-risk profile within a monopolistic market. But as energy reforms unbundle utilities and open retail competition from April 2016, these assets face almost certain downward pressure on valuations. The size of this decline in valuations will depend upon how much time utilities will have to strengthen their balance sheets before they are completely exposed to the competitive market. Watch as these companies seek new value growth through convergence with telcos. For example, in December 2015, Osaka Gas entered into an agreement with NTT DOCOMO to sell bundled electric and telecommunication services to homes from April 2016.
A power station for the price of an average Sydney house — that's how much of the media characterized the AUD$1m (approximately US$720,000) sale of the 36-year-old Vales Point power station to Sunset Power in November 2015 (the deal was finalized in December). The 1,320 MW coal-fired generator was the largest state-owned power plant in the Australian state of New South Wales (NSW), and its sale was part of the government's privatization program (which also included the divestment of network assets, TransGrid, to a consortium of local and international investors for AUD$10.3b in November).

Excess market capacity in recent years had seen Vales Point experience significant financial losses and struggle to attract the right buyer before the deal, which sees Sunset Power take on about AUD$130m of the plant’s liabilities, and agree to keep on its workers for at least another four years. (At the end of its life and after decommissioning, the power station will be handed back to the government, which will meet the costs of site remediation).

Based in Brisbane, Queensland, Trevor St Baker is a stalwart of the Australian energy industry. In addition to his role at Sunset Power, Trevor is founder and now deputy chairman of specialist business energy retailer, ERM Power Limited, which operates as a retailer in both Australia and the US, and he holds positions on a number of boards and start-up companies. After the Vales Point sale, ERM entered into an offtake agreement with Sunset for the seven-year term of coal supply contracts which Sunset has with two local mines.

Trevor believes that much of Vales Point's financial difficulty in recent years was due to the plant's disadvantaged position as the last of the state's independent base-load generators. He is confident that bringing the plant into the Sunset Power group will turn its fortunes around.

“Sunset Power saw this as an opportunity to establish a long-term contract between the largest independent base-load generator in the market and the largest independent retailer, ERM Power, for significant proportions of their planned contract wholesale energy trading. With the wholesale trading market becoming less liquid, the intention is to achieve more cost-
efficient trading in the market by avoiding the cost exposure associated with shopping around Vales Point’s base-load power production.

“The long-term contracts – with ERM Power and with some other parties – provide a more effective and efficient operating business case for Vales Point, while also maximizing the market competition desired by the government.

“At the end of the day, the market needs liquidity with four or five major parties as well as some smaller players to keep those major parties on their toes.”

The deal is particularly innovative as it allows both Sunset and ERM to leverage the value of their relationship, an approach Trevor also applies to his other business ventures. While Trevor describes the completion of such complex deals with multiple parties, including Macquarie Bank, as “like slalom riding,” he says it was guided by “a common blue sky belief with benefits to all parties involved.”

**Broad investment portfolio includes disruptive technologies**

The transaction takes place as much of the world is reconsidering the long-term future of coal-fired generation as a source of power. In Australia, almost 80% of total electricity output is still powered by coal and, while government policy toward renewables has wavered in recent years, the December 2015 Paris climate change agreement sets Australia’s commitment to reducing greenhouse gas emissions at 26–28% by 2030, compared to 2005 levels.

The debate about the impact of this policy change on the place of coal-fired generation in the energy mix is shaping the capital agendas and transactional strategies of utilities and energy investors. But Trevor remains positive about the future of Vales Point and the role of coal-fired generation in Australia.

“Despite the pressure that may exist in the media, the fact is that people still want their lights on and ensuring reliability of power supply means that Australia will need coal-fired power for a long time to come,” he said.

“We see Vales Point continuing to contribute to the greatest possible level of electricity supply reliability and competition in the State for as long as there is a need for low-cost, coal-fired base-load generation to meet electricity demand in the National Electricity Market.”

But Trevor and Sunset Power also have interests in gas-fired power and are investing in a number of clean energy initiatives.

Trevor says Sunset’s strategy illustrates how a utility can take a broad approach to investments, acquiring a large coal-fired generator while also funding a diverse array of emerging, innovative clean energy and energy-efficient technologies.

He explains: “The world needs a range of energy sources and the industry is currently very exciting. We have invested heavily in clean energy and disruptive technologies including second-generation LED printed “flat light,” printed solar PV, electric vehicle fast-charging, nuclear small modular reactors, and what I hope will be the invention of the century – ultra low-cost printed energy storage.

“Sunset Power has invested in a number of innovative Australian new-start founders who are already breaking into world markets with innovative product offerings, demonstrating the potential we have in Australia to create the next Silicon Valley – watch this space.”
Expect robust activity led by China, Australia and India

The investment outlook for the Asia-Pacific P&U sector looks strong for 2016, with China, Australia and India likely to remain hotspots as utilities add assets that can provide growth opportunities and increase their customer base. We see deals driven by a series of key factors:

- **Electrification drives need for new generation capacity:** As many countries grapple with high energy demand growth, the need for new generation capacity will drive robust investment in the region. Much of this will be directed at Vietnam and Indonesia, which together will require around 90 GW of new capacity over the next 10 years. As these requirements dwarf the organic investments expected in almost all developed markets, we expect growing interest from financial investors, advisory firms and traditional utilities. Transactional activity should increase as joint ventures are created to exploit opportunities.

- **Energy reforms, particularly in China, India, Japan and Vietnam:** China’s phased program of reforms aims primarily to split the country’s transmission and distribution of energy. In early 2015, the Chinese government expanded direct power sales to seven cities and made progress toward an electricity trading platform. With broader reform timelines likely to be announced in 2018, unbundling will allow new entrants to break the state-owned distribution monopolies’ grip on last-mile distribution, thus triggering M&A and partnership activities. Japan is already witnessing a surge of new entrants in the electricity retail segment; once full retail competition kicks off in April 2016, players will move to consolidate to gain market share. Power tariff reform, which will increase tariffs in Vietnam, has boosted the returns on offer to developers, and is strengthening investors’ interest in the sector. The country is currently looking to push the reforms agenda and has laid out a clear three-phase approach, which will result in significant investment opportunities for both private and foreign investors.

- **Domestic consolidation in China:** While the Chinese economy is showing signs of a slowdown, we do not expect this to negatively impact P&U deal activity. The slowing economy will add to overcapacity in thermal generation, which may be compounded by an increased emphasis on energy efficiency measures. These factors are expected to lead to further utilities consolidation, which will be a key M&A driver in China going forward.

- **Lower gas prices to boost its role in generation mix:** As most Asia-Pacific economies, including China, India, Indonesia and Thailand, seek to build new generation capacity, the low price of gas is expected to boost its prominence in the overall generation mix of many countries. While coal will remain the dominant fuel, gas and renewables are being increasingly promoted by governments in the region, as evidenced by recent gas pricing reforms in China.

- **Push for renewables, particularly in India:** Throughout the region, the move toward renewables continues, with the Indian solar and wind energy markets especially attractive to investors. Recently, India’s Power Finance Corporation and Rural Electrification Corporation provided a US$14.7b boost to the country’s renewable segment by offering cheaper finance to low-risk commissioned renewable energy firms. In 2016, we expect to see conglomerates with large debt sell off assets, with both domestic and foreign players keen to bid. Two of Canada’s largest pension funds Caisse de dépôt et placement du Québec (CDPQ) and PSP Investments are reportedly looking to invest in the Indian infrastructure sector and are scouting for assets. In November 2015, PSP acquired a 49% stake in Reliance Infrastructure’s electricity generation, transmission and distribution business that services Mumbai and adjoining areas. The deal should close in Q1 2016.

- **Clearer policy position will also spur renewables activity in Australia:** Increased certainty around Australia’s Renewable Energy Target (RET) scheme looks set to boost the country’s investment in this segment after years of sluggish activity. Investment in large-scale renewables projects in Australia reached just US$830m in 2015, which is about one-third of what is required to meet the 2020 target, according to a report by Bloomberg New Energy Finance. Expect the revised RET to trigger a wave of new renewables projects – already Queensland utility Ergon Energy has released a tender to buy 150 MW of renewable energy capacity, a move which has attracted strong interest from diverse players. In January 2016, privately-owned Alinta Energy also called for expressions of interest for large-scale generation certificates and renewable energy.

While these developments are positive for the clean energy sector, as new renewable capacity comes online, existing coal-fired generators will need to review costs and flexibility of operations if they are to remain in the merit order. We expect M&A activity in Australia to be stimulated by the increased adoption of rooftop solar and a growing consumer inclination toward grid independence. Utilities are responding to this trend by seeking partnerships with battery storage players such as Tesla and Panasonic to offer customized services to consumers.
Australia

- Increased foreign investment in the country’s renewable energy segment is expected, particularly in large-scale wind and solar. The greater adoption of solar plus energy storage, however, may have a negative impact on utilities’ balance sheets over time.
- The successful privatization of TransGrid has prompted the New South Wales government to call for expressions of interest in stakes in Sydney power distribution company Ausgrid and consider listing a 50.4 percent stake in Endeavour Energy later this year.

Pakistan

- A US$800m loan from the Asian Development Bank has strengthened plans to reform the electricity distribution system.
- Government investment will move from large generation capacity toward improving efficiency through the introduction of smart meters and computerized billing and information system.

India

- Solar energy is expected to remain an attractive investment as the country works toward its target of generating 100 GW of solar-generated electricity by 2020.
- Much needed reforms in debt-stricken distribution utilities will drive growth in the T&D sector.

China

- Though China is facing economic slowdown, we expect the country to remain the main driver of deal activity in the region in 2016.
- Strong appetite for cross-border asset acquisition is set to continue in 2016.
- Energy reforms will to continue to boost energy efficiency and renewables in 2016.

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Convergence gathers pace as utilities seek new growth opportunities

It was another blockbuster year for the Americas power and utilities (P&U) sector, with the region’s robust activity illustrating how utilities are using strategic transactions to adapt to uncertain global economic conditions. Convergence between electric and gas utilities is an increasingly strong driver of mergers and acquisitions (M&A), with these US megamergers contributing much of the year’s deal value.

US$69.2b total US deal value for 2015, a six-year high

US$5.1b in Q4 generation deals, the highest quarterly result for Americas in 2015

US$12.5b the largest Americas deal of the year

30% premium on historical average of transmission and distribution (T&D) valuations
Q4 2015 trends:

Generation deals rise, valuations remain mostly subdued: Q4 registered the highest generation deal activity during the year hosting deals worth US$5.1b (70% occurring in the US), primarily in the gas generation segment. In November 2015, Luminant Holding Company announced it would acquire US-based natural gas generation assets from NextEra Energy for US$1.3b, at US$440/KW multiple, much lower than the median multiple offered during the year. Valuations for generation/independent power producers (IPPs) assets are likely to remain subdued as many wholesale markets remain uncertain. However, generation assets located in US states with favorable regulatory environments and upside rate-growth opportunities, such as ISO New England and PJM, will witness rising investor interest in 2016, due to their ability to offer better returns as capacity prices increase. For example, the Carlyle Group's US$490m acquisition of a natural gas plant from Rhode Island State Energy Center (RISEC) at US$822/KW multiple was much higher than the median multiple of US$688.9 offered during the year for generation assets.

US and Canada are M&A hotspots: Many of the region's 2015 deals took place in North America, with Q3 the highlight of the year, recording multiple mega deals, including Southern Energy's US$12b acquisition of AGL Resources and Emera's US$10.4b acquisition of TECO Energy. In Q4 2015, it was US gas T&D, renewables, and gas generation assets that attracted maximum investors' interest while, in Canada, investments were largely driven by domestic transactions worth US$574m in renewables and gas. In December 2015, Fortis Inc. acquired Canada based Aitken Creek Gas Storage ULC for US$266m in a bid to build on its asset base of gas infrastructure in the region.

Growth through convergence and diversification: While Q4's deal activity (US$16b) dipped from Q3, the quarter witnessed a growing transactional trend toward convergence. We saw US-based integrated utilities move aggressively to acquire regulated gas T&D assets that offer the benefits of diversification, stable cash flows and an expanded customer base in a low wholesale price environment. Duke Energy’s acquisition of Piedmont Natural Gas for US$6.7b was a notable example. As we move into 2016, we expect similar gas pipeline investments to gain momentum as utilities, mindful of modest electricity growth expectations, look to gas to drive growth.

Extension of tax credits brighten renewables outlook: In December 2015, the US House of Representatives unveiled a US$1.1t appropriations bill that includes five-year extensions to wind and solar energy tax credits. The share price of renewable companies, such as SolarCity Corp, SunEdison and NRG Yield, spiked post announcement. We expect these extensions, as well as the Paris Climate Change Agreement and the proposed US Clean Power Plan, to further brighten the investment outlook for this segment.

Restructuring and rebalancing of assets gain prominence: We are continuing to see a rebalancing of roles and assets. After a period of continuous equity loss, both NRG Energy and SunEdison are now looking to restructure and streamline their business portfolios. NRG Energy has outlined a corporate restructuring and balance sheet tightening initiative intended to free up US$1b of capital, while SunEdison has announced major sell-offs across the globe to cut debt and restore shareholder confidence.

Regulated assets still command premiums: During the year we saw utilities paying above average premiums on regulated assets, which were already trading at the high end of their historical averages – ~37%, higher than last year’s average. While low natural gas prices and rising interest rates present a challenge to the sector, strong balance sheets and availability of low-cost debt are enabling utilities to acquire these assets at premium valuations. With predictable cash flows and rates of return, we expect regulated assets to grow more resilient in 2016 and continue to command high valuations.
<table>
<thead>
<tr>
<th>Announcement date</th>
<th>Target</th>
<th>Target country</th>
<th>Bidder</th>
<th>Bidder country</th>
<th>Deal value (US$m)</th>
<th>Rationale for deal</th>
<th>Segment</th>
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<tr>
<td>26 October</td>
<td>Piedmont Natural Gas Company</td>
<td>US</td>
<td>Duke Energy Corporation</td>
<td>US</td>
<td>6,700</td>
<td>Increases Duke's customer base and project pipeline, while strengthening total regulated earnings</td>
<td>T&amp;D: Gas</td>
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<td>27 November</td>
<td>La Frontera Holdings</td>
<td>US</td>
<td>Luminant Holding Company</td>
<td>US</td>
<td>1,313</td>
<td>Allows La Frontera to further diversify its energy mix</td>
<td>Generation</td>
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<tr>
<td>08 October</td>
<td>Talen Energy Corporation (Holtwood hydroelectric plant)</td>
<td>US</td>
<td>Brookfield Renewable Energy Partners</td>
<td>Canada</td>
<td>860</td>
<td>Strengthens BREP's portfolio of power generating assets</td>
<td>Renewables: Wind</td>
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<tr>
<td>10 December</td>
<td>SunEdison, Inc. (Bingham and Oakfield wind farm assets)</td>
<td>US</td>
<td>Terra Nova Renewable Partners</td>
<td>US</td>
<td>787</td>
<td>The proceeds from the transaction will provide SunEdison with an upfront development margin</td>
<td>Renewables: Wind</td>
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<td>18 December</td>
<td>Fenix Power Peru SA</td>
<td>Peru</td>
<td>Consortium</td>
<td>UAE, Chile, Peru</td>
<td>786</td>
<td>Deal will help investors to improve diversification in terms of revenue streams, generation technology and market</td>
<td>Generation</td>
</tr>
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</table>

Source: EY analysis based on Mergermarket data

**Transaction snapshot**

**Innovation and diversification define a blockbuster quarter**

The largest P&U deal of the quarter was a significant one, reflective of a growing move by the region’s utilities to innovate, converge and diversify in order to seek growth. Duke Energy’s US$6.7b acquisition of Piedmont Natural Gas utility is expected to triple Duke’s gas customers, boost its pipeline stake and strengthen the company’s total regulated earnings to 90%. Duke’s all-cash acquisition price of US$60 a share is close to a 40% premium to Piedmont stock’s last closing price, higher than Southern Energy’s 38% premium to buy AGL Resources. The debt-to-total capitalization of around 75% for the deal hovers near the high-end of the range, reflecting utilities’ continuing desire to take advantage of historically low interest rates to undertake M&A. The Duke-Piedmont deal follows similar transactions such as those of Southern Co., Emera Inc. and Black Hills Corp, which have all recently acquired gas distribution companies to secure predictable cash flows.

Q4 2015 also saw gas generation deals worth US$5.1b as utilities divested merchant coal generation assets in exchange for investments in stable gas-based businesses. Coal-to-gas switching is gaining momentum as coal-fired plant retirements take effect and utilities gear up to comply with the US Clean Power Plan (currently before the courts). ArcLight Capital Partners’ acquisition from Tenaska Energy...
of seven natural gas and dual-fuel plants in New York and the Midwest, totaling 4.8 GW, reflects this growing trend. ArcLight is hoping to benefit from favorable dynamics driven by the retirement and displacement of coal-fired and nuclear assets in the PJM market. Other utilities such as NextEra Energy are seeking to reduce their merchant exposure and invest in renewables and other regulated assets. The company sold its Texas merchant assets in Q4 for US$1.3b and is currently in a race to acquire Oncor Electric Delivery, the largest T&D utility in Texas. Another notable deal was the US$786m acquisition of Fenix Power Peru SA, by a consortium of Middle Eastern sovereign funds, and Chile-based Colbun SA. The deal reflects the growing focus of investors from the Middle East, such as the Abu Dhabi Investment Authority, on increased diversification of revenue streams, generation technology and market.

Financial investors’ interest was subdued in 2015, with deals reaching just US$3.3b, compared to US$14b in 2014. Private equity (PE) firms, infrastructure funds and pension funds did not participate much in the sector's M&A activity, which was driven primarily by strategic buyers. While yieldcos dominated the buyer community in the renewables segment, the equity erosion of this group means we expect infrastructure funds to make a comeback in 2016.

Valuations snapshot
IPPs and yieldcos hit hard; regulated assets stay strong

In 2015, valuations of the region's utilities were impacted by some interesting and diverse developments in the sector and the US equity markets. Repercussions of the federal interest rate hike, proposed introduction of the Clean Power Plan, extension of renewable energy tax credits and higher capacity auctions were felt by utilities across the value chain. In addition, the US average day-ahead market on-peak power prices fell in 2015, averaging 32.6% lower year-over-year at US$24.66/MWh. These factors, as well as falling gas prices, further squeezed the operating margins of coal-fired generators.

It was IPPs and yieldcos that were hit hardest by significant erosion of equity in the market. We saw investors’ risk appetites shift in favor of regulated companies with strong balance sheets and transparent growth rates. IPPs are currently trading at a 4% discount to historical valuations, and are likely to remain suppressed until there is a recovery in gas and power prices. As well as these weak prices, investors are concerned over the amount of new gas-fired generation coming online and further renewables growth. Already natural gas prices are down by more than 50%, due mostly to robust production and high storage levels. Despite these tough conditions, some assets in locations with favorable conditions, including supply-demand balance, rate growth opportunities and long-term PPAs, were targeted by investors. One example was TransCanada’s US$696m acquisition of Ironwood’s natural gas facility in the PJM market in October 2015.

We don’t expect conditions or valuations for merchant generators to alter significantly in 2016. However, reforms in capacity markets that have shifted a higher percentage of future gross margins toward capacity payments will offer greater cash flow visibility to these players. This uplift in capacity prices should offset the impact of falling gas prices on EBITDA. We are also seeing some of these companies, such as Calpine, explore initiatives to expand their retail segments, in a bid to insulate the business from volatile commodity prices.

The year ended well for the renewable energy sector with several encouraging regulatory developments, including the extension of the solar and wind tax credits and the proposed introduction of the Clean Power Plan. Utilities scrambling to own a share of solar and wind generation to comply with...
state renewable purchase obligations (RPOs) drove much of the deal activity, which totaled US$11.8b in 2015. 2016 is likely to be another quiet season for renewables-focused yieldcos as equity erosion will make accretive project acquisitions unlikely. While fundamentals remain strong, we expect investors to take a wait and watch approach.

For regulated utilities, recent deals have shown higher premiums. Duke Energy Corporation’s pending agreement to purchase Piedmont Natural Gas Company, Inc. carried a premium of 42.1% to Piedmont’s stock price one day prior to the deal’s announcement; and Emera Inc.’s offer for TECO Energy Inc. marked a premium of 30.8%. Despite the federal rate hike of 25 basis points, we expect investors will continue to offer premiums on assets that can offer clear rate growth opportunities, and for gas local distribution companies (LDCs) to benefit from low commodity prices. These utilities primarily charge a distribution fee for delivering natural gas – as the price of gas falls, demand increases and, accordingly, distribution revenue.
Expect deals focused on rebalancing and convergence

We expect dealmaking in the Americas P&U sector to be shaped by several factors including:

- **Convergence and diversification:** The trend toward convergence and diversification is particularly strong in the Americas and will remain a main driver of deals in 2016 and beyond. US companies, in particular, are rebalancing operations in response to low wholesale prices, depressed load growth and energy efficiency measures. As utilities converge, we expect integrated utilities to target gas LDCs, as well as midstream assets, as they pursue strategic growth to boost earnings. Utilities are increasingly looking at small and mid-caps that have strong individual growth stories to increase scale and size, and are finding support from strong balance sheets and availability of cheap debt. In one example of this strategy, DTE Energy has said it is open to deals and looking at smaller asset levels acquisitions, especially in their gas and midstream business. The utility is expected to retire about 60% (approximately 3,500 MW) of its coal fleet by 2030 to comply with the US Clean Power Plan, and will replace this lost capacity with renewable and natural gas-fired generation.

- **Generation deals remain strong:** Generation deals should remain strong in 2016, attracting diverse buyers including utilities seeking to replace capacity as well as financial investors which will be keen to add gas generation assets to their portfolio in anticipation of rising gas prices. With current stock prices among IPPs trending down, we can expect some of these players to explore options ranging from asset sales to take-privates. Talen Energy has already indicated it is not averse to the idea of going private if presented with a compelling offer.

- **Renewables boosted by regulatory support:** Renewable assets traded at historic rates in Q3 2015, as utilities moved in urgency to comply with RPOs. This trend is likely to continue with other favorable regulatory developments, including the proposed Clean Power Plan, to further boost M&A in this segment.

- **Innovation emerges as significant driver:** Innovation will also be an increasingly significant driver of transactions. As energy technology becomes cheaper and more widespread, we forecast that storage, particularly the IT integration applications that support it, will move beyond being a niche market for private equity players and become a more mainstream investment for utilities.
**US**

<table>
<thead>
<tr>
<th>Deal value</th>
<th>Deal volume</th>
<th>Capital outlook</th>
</tr>
</thead>
<tbody>
<tr>
<td>US$69,197m</td>
<td>94</td>
<td>High valuations of regulated assets will see some investors decide to exit, leading to M&amp;A opportunities. In one example, Empire District Electric Company has confirmed it is exploring strategic investment alternatives for the company. The extension of renewable tax credits will reduce the financing costs of these projects and increase profit margins for solar and wind companies. Long-term visibility and predictable cash flows should see investors rewarding these assets. Diversified utilities and IPPs will continue to explore the home solar market as they look for alternative revenue streams. Watch for investments in this space.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Deal value</th>
<th>Deal volume</th>
<th>Capital outlook</th>
</tr>
</thead>
<tbody>
<tr>
<td>US$7,483m</td>
<td>10</td>
<td>Brazil’s state-run utility Centrais Elétricas Brasileiras has expressed interest in the planned sale of its Celg-D power distribution unit, with State Grid Corporation of China the lead contender. Investments in T&amp;D will increase as new capacity, particularly renewables, will require grid connections. Deployment of smart meters and other smart grid technologies will increase to improve efficiency and cut costs.</td>
</tr>
</tbody>
</table>

**Mexico**

<table>
<thead>
<tr>
<th>Deal value</th>
<th>Deal volume</th>
<th>Capital outlook</th>
</tr>
</thead>
<tbody>
<tr>
<td>US$1,577m</td>
<td>3</td>
<td>Mexico’s energy reforms are moving fast and giving impetus to investments in the sector. The government launched the wholesale power market in January 2016 and is slated to open its first transmission tender in the first quarter of 2016. Mexico has also introduced a clean energy law that stipulates that 25% of power generated by 2018 must come from clean sources, with the figure rising to 60% by 2050. Investment in renewable capacity is expected to increase as the government tries to reduce its energy import bill and ensure energy security.</td>
</tr>
</tbody>
</table>

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2015 was a transformational year for the Africa and Middle East region’s power and utilities (P&U) sector, as governments progressed reforms aimed at attracting private capital, and improving the political and financial climate for foreign investors. These changes encouraged more overseas investors into the region, with much of the focus on new generation capacity, particularly renewables. The halving of oil prices over the last year loomed large, sparking infrastructure opportunities and driving utilities in the Middle East to diversify their funding strategies.

US$35b budgeted by UAE to cut dependence on gas-fired power with new renewable and nuclear capacity

300 GW renewable generation targeted in Africa by 2030 through the African Renewable Energy Initiative

US$25b foreign investment package planned for Iran’s power sector

75% Dubai’s renewable power target for 2050
Q4 2015 trends:

- **Renewables continue to attract investment:** The limited activity in mergers and acquisitions (M&A) in Africa and the Middle East has been focused on renewable assets, with this segment, particularly in South Africa, appearing most attractive to both domestic and international investors. In October 2015, Google announced plans for its second renewable investment in Africa, the acquisition of a 12.5% stake in the continent’s largest wind farm in Kenya, Lake Turkana from Vestas.

  The UAE (Abu Dhabi and Dubai) has the region’s most ambitious clean energy targets, with a reported budget of US$35b to cut its reliance on natural gas-generated power to 70% by 2021. Solar photovoltaic (PV), in particular, is gaining prominence, and the country is chasing aggressive targets, as are Saudi Arabia and Kuwait.

  During Q4, the Iran Energy Ministry signed a deal with an unnamed German company to build 1.25 GW of solar capacity in Tehran. As it prepares for the lifting of international economic sanctions in 2017, Iran is attracting increased attention and may emerge as the next big investment destination.

- **Influx of Chinese and Russian investments:** The quarter saw key investments by Chinese and Russian players. China is reportedly targeting investments in UAE, Morocco and Jordan, although the biggest Chinese investment of the quarter was the US$1.7b financing by Sinohydro for the Zambian 750 MW hydro plant. During Q4, we also saw China’s Shanghai Electric Power Company invest US$25.5m in a 300 MW coal fired plant in Mozambique.

  Russia’s interest in the region lies mostly in developing nuclear capacity — the country has signed agreements to develop nuclear capacity in Jordan, Iran and Egypt. In Q4, Egypt’s first nuclear plant at El Dabaa (4.8 GW capacity) achieved financial close with the Russian state-owned firm, Rosatom financing 80% of the estimated US$20b cost.

- **European utilities expand presence:** As domestic demand remains flat, more Europe-based utilities are looking to the region for new opportunities. In November 2015, Électricité de France (EDF) and Rio Tinto Alcan teamed up with ENEO Cameroon and the Cameroon government to jointly invest US$1.1b to boost electricity generation in the country. EDF, Engie and RWE have also participated in auctions for 800 MW of solar projects in Dubai.

- **International funding agencies offer support:** The European Bank for Reconstruction and Development (EBRD) is providing financing support to private power projects within some of the smaller economies in the Middle East. The Bank has budgeted US$250m to develop renewable energy power in Morocco, Egypt, Tunisia and Jordan – all of which have established medium-term renewable targets. The World Bank has also offered support from its US$1b development fund to the Egyptian government, which announced in December 2015 that it would liberalize its energy market to allow for greater private sector investment.

  Similarly, the African Development Bank (AfDB) has committed to invest US$12b over the next five years in African energy projects (mostly renewables and hydro). The Bank has already received US$10b financial support from G7 countries to produce 300 GW of electricity by 2030.

- **Falling oil prices:** The halving of oil prices over the last year is sparking infrastructure opportunities for foreign investors in the Middle East. In an attempt to alleviate the decline in government expenditure and banks’ liquidity crunch, Gulf countries are starting to open doors to foreign capital by introducing energy reforms, privatization, removing subsidies and shifting toward renewables. Saudi Arabia, which is running an annual budget deficit of over US$100b, has recently outlined plans to speed up state spending and bring subsidy and privatization reforms to withstand low oil prices. If oil prices continue in the US$30-40 range for a sustained period we can expect utilities to diversify funding strategies in 2016.

- **Outbound investments aimed at diversification:** The quarter also recorded a number of outbound deals by Middle Eastern sovereign and wealth funds aimed at diversifying investments beyond the region into Europe and Asia. In October 2015, a consortium, led by Abu Dhabi Investment Authority, acquired an undisclosed stake in India-based renewable energy company, ReNew Power Ventures for US$265m, and Kuwait’s sovereign wealth fund completed the 25% stake acquisition in Spanish Gas Natural’s Global Power Generation business for US$550m. In November 2015, a consortium of Canadian, Middle Eastern and Australian investment funds won the auction for Australia’s TransGrid with a US$7.4b bid.
Spotlight on the Middle East

Growth, demand and reforms trigger a surge of transactions across the region

Report by David Lloyd

During 2015, the Middle East has continued to rise as a global P&U transactional hotspot. We are seeing governments throughout the region take bold steps to reform their energy sectors and unbundle inefficient incumbent utilities in a bid to diversify their energy mix, meet growing demand and adapt to falling oil prices. This environment is rich with opportunities for power and utilities investors keen to gain a foothold in one of the world’s most dynamic energy markets where electricity consumption growth to 2025 is tipped to grow by 40%.

Huge need for new, cleaner capacity

The most striking feature of the Middle East P&U sector, particularly in Saudi Arabia and the United Arab Emirates (UAE), is its dynamism. After a period of policy review, transformation is now visible and fast-paced.

Large capital requirements for building new capacity and financial pressure on public finances due to declining petroleum revenues in the region are driving governments to diversify the economy away from the traditional cheap, energy extraction and commodity (e.g., bulk petrochemicals, fertilizer, aluminum smelting) businesses toward higher value products such as more specialty petrochemicals.

These energy-intensive industries, as well as increased government investment in infrastructure and real estate, are adding to a growing demand for power across the region. Saudi Arabia plans to double its installed power capacity from 55 GW in 2013 to 120 GW by 2020.

Some of the region’s new capacity will be sourced from cleaner energy sources, though the planned adoption of renewable energy is not as high as might be expected. The Dubai Electricity and Water Authority (DEWA) has said it will include 15% of renewable energy in its generation mix by 2030, up from the current figure of 5%. In Abu Dhabi, the Government has prioritized nuclear energy.

The push toward cleaner energy offers opportunities for investors, not only in building new capacity but also in redesigning electricity infrastructure and providing the necessary ancillary market.

Transforming operations and customer experience

As utilities rethink strategies to consider the long-term implications of changes, I see opportunities emerging to help companies transform operations and meet the demands of newly empowered, globally connected customers.

With a rising demand/supply imbalance, utilities are giving fresh priority to the implementation of energy efficiency measures. There are also opportunities arising from an increased focus on driving operational efficiencies – evident from the unbundling of Saudi Electricity Company (SEC) and recent increases in electricity and water tariffs.

Utilities are also looking for ways to improve quality of service and increase revenues through new services offerings. These factors are driving adoption of the SMART agenda, customer and billing solutions, and demand management services, all of which present opportunities for companies with expertise in these areas. In the UAE, the Abu Dhabi Distribution Company together with the Regulation and Supervision Bureau has already adopted an innovative billing method for SMART users aimed at showing consumers the real-time price of electricity and water.

Utilities in these regions are also under government pressure to maintain local headcount quotas, creating opportunities for those companies with people and organizational strategy expertise.

As utilities develop new strategies, we are seeing capital agenda opportunities for both domestic and foreign players. We are currently working with large utilities in the region around public private partnerships (PPPs), capital deployment, diversification strategy, and joint procurement projects.
Which African markets should be on the radar for P&U investors in 2016?

A number of African markets are currently undergoing significant transformation driven by energy reforms and unbundling, technological advances, high consumption growth and a significant shift toward renewables. All these developments are creating investment opportunities for private and foreign investors that can partner with local players to support new infrastructure build, maintenance of existing infrastructure, smart and renewables technologies transfer, and financing of capital-intensive projects. We have been tracking reform developments in several of these markets and have identified a number of geographies that warrant attention.

Chart 19
Markets with attractive P&U sector in Africa

<table>
<thead>
<tr>
<th>Country</th>
<th>Economic political stability</th>
<th>Energy reforms and sector investment potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zambia</td>
<td>More</td>
<td>Low</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>Less</td>
<td>Low</td>
</tr>
<tr>
<td>Tanzania</td>
<td>More</td>
<td>High</td>
</tr>
<tr>
<td>Angola</td>
<td>Less</td>
<td>More</td>
</tr>
<tr>
<td>Egypt</td>
<td>More</td>
<td>High</td>
</tr>
<tr>
<td>Nigeria</td>
<td>Less</td>
<td>Low</td>
</tr>
<tr>
<td>South Africa</td>
<td>More</td>
<td>Low</td>
</tr>
<tr>
<td>Morocco</td>
<td>More</td>
<td>Low</td>
</tr>
<tr>
<td>Kenya</td>
<td>More</td>
<td>High</td>
</tr>
</tbody>
</table>

Sources: EY analysis

- Confirmed unbundling and privatization plans in Kenya, Tanzania, Nigeria, Egypt and Angola to drive private investments.
- Rising electricity consumption across the region to result in new generation and transmission and distribution (T&D) infrastructure build – 3.1 GW of new gas generation capacity to be developed from 2019 to 2025 in South Africa, and 1.3 GW of new capacity planned in Nigeria.
- Renewables to witness exponential growth in markets including South Africa, Ghana, Nigeria, Morocco and Egypt.

**Kenya:** Projected electricity consumption growth of 12% through 2020, coupled with strong progress toward unbundling and retail privatization, have made Kenya one of the most attractive markets in Africa. A significant focus on non-hydro renewables means that, by the end of 2024, the majority of the country’s electricity will be generated from clean sources of fuel. Recently, Google announced plans to take a 12.5% stake in Africa’s largest wind farm in Kenya, Lake Turkana from Vestas.

**Nigeria:** Nigeria’s electricity market is slated to grow at 9% through 2020. A successful first wave of utilities’ privitization and energy reforms has encouraged the growth of a vibrant Nigerian energy sector and increased its appeal to investors. However, delays in further reforms, and an unstable political environment are deterring some private investments, and may mean investors will wait a long time to realize their gains. In January 2016, the new owners of distribution companies (DISCOs) declared “force majeure”, an inability to meet contractual obligations, and have demanded a refund of their investments in wake of the government’s failure to introduce cost-effective tariffs.

**South Africa:** A rank of 73 in the World Bank’s ease of doing business 2015 index, a relatively stable sovereign credit rating of BBB and low political risk mean that South Africa offers solid macroeconomic and political fundamentals to investors. In addition, the country plans to increase its percentage of renewables in its energy mix by an impressive 18% by 2020, a target supported by Government’s plan to invest US$16b to upgrade grid infrastructure by 2025. In December 2015, the government announced it would issue a request for proposal (RFP) for a 9,600 MW nuclear build program.

**Morocco:** A projected growth rate of 6% per annum in electricity consumption through 2020, relatively good quality of overall infrastructure and high sovereign credit rating augur well for the power sector in Morocco. The country has established the world’s largest (580 MW) concentrated solar power (CSP) plant, highlighting its prioritization of renewables on its power agenda. The Moroccan Agency for Solar Energy’s (MASEN) solar integrated projects call for US$9b in investment by 2020, with the country already attracting attention from investors across the Middle East, Europe and China.
**Egypt:** The Electricity Law issued in July 2015 paves the way for Egypt's long-awaited reforms that will see the country's electricity sector transitioning into an open market for generation and distribution (transmission will remain under state control). Egypt offers promising investment opportunities, primarily in new generation capacity and renewables. Wind and solar Build, Own and Operate (BOO) projects worth 950 MW are at various stages of being tendered while EBRD has allocated US$500m for Egypt's solar energy program, which is targeting 2 GW of PV capacity over the next few years.

**Tanzania:** With projected growth of 15% in electricity consumption through 2020, Tanzania is among the bigger markets of Africa. The country’s Power Sector Reforms and Governance Support Program (PSRGSP), currently underway, aims to unbundle the energy sector and introduce retail competition. The government has planned to sell a 49% stake in Tanzania Electric Supply (Tanesco) and invest US$1.2b over 10 years in the company.

However, despite these opportunities, Tanzania ranks low on the World Bank's ease of doing business index and high on its corruption perception index, which together presents a downside to potential investors.

**Angola:** Despite economic turmoil in the country, Angola has ring-fenced its budgeted investment in the power sector. The country is undertaking unbundling of utilities and other reforms aimed at plugging inefficiencies and building a stable electricity supply. A growth of 12% per annum in electricity consumption hints at promising opportunities but low political and economic stability, coupled with poor quality infrastructure, could deter new investors.

We analyzed select countries where energy reforms and unbundling are either currently being undertaken or planned in the near future and mapped these countries on the basis of their economic and political stability, inclusion of renewables in the energy mix and quality of overall infrastructure. The analysis presents the relative attractiveness of the markets for investments in the short term.

### Key investment announcements, Q4 2015

<table>
<thead>
<tr>
<th>Investor</th>
<th>Target country</th>
<th>Project description</th>
<th>Segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>African Development Bank (AfDB)</td>
<td>Africa</td>
<td>AfDB has committed to invest US$12b over the next five years in African energy projects (mostly renewables and hydro)</td>
<td>Renewables and hydro</td>
</tr>
<tr>
<td>Standard Bank and Industrial and Commercial Bank of China (ICBC)</td>
<td>South Africa</td>
<td>Standard Bank has announced a partnership with the Industrial and Commercial Bank of China (ICBC) to raise US$1.5b (R10b) to support the development of South Africa’s power generation infrastructure over the next five years</td>
<td>Generation</td>
</tr>
<tr>
<td>European Bank for Reconstruction and Development (EBRD)</td>
<td>Morocco, Egypt, Tunisia, Jordan</td>
<td>The EBRD has earmarked up to US$250m in debt and equity funding for private companies in the southern and eastern Mediterranean region to build renewable energy generation capacity</td>
<td>Renewables: Wind and Solar</td>
</tr>
<tr>
<td>European Investment Bank (EIB), EBRD</td>
<td>Egypt</td>
<td>EIB granted a US$600m loan to Egypt to develop the 1,800 MW Damanhour Power Plant (estimated cost: US$1.3b). EBRD has approved a US$200m loan for the project</td>
<td>Generation: Combined cycle gas turbine</td>
</tr>
<tr>
<td>Power Africa Initiative</td>
<td>Tanzania</td>
<td>Financing of the 600 MW gas power plant and transmission line to be developed in Mtwara. The project is being constructed in a public-private partnership (PPP) model with US-based Symbion Power and is expected to cost US$1.3b.</td>
<td>Generation: Gas</td>
</tr>
<tr>
<td>France</td>
<td>Africa</td>
<td>African countries with more than US$2.1b (€2b) for the development of renewable energy over the next four years.</td>
<td>Renewables</td>
</tr>
<tr>
<td>Access Infra Africa</td>
<td>Nigeria</td>
<td>Dubai-based Access Infra Africa signed a joint development agreement for a 50 MW solar power plant in Nigeria with Quaint Global Energy (it would contribute to 30% equity requirement)</td>
<td>Renewables: Solar</td>
</tr>
<tr>
<td>EDF and Rio Tinto Alcan</td>
<td>Cameroon</td>
<td>EDF and Rio Tinto have teamed up with ENEO Cameroon S.A. and the Cameroon government to jointly invest US$1.1b to boost electricity generation.</td>
<td>Generation</td>
</tr>
<tr>
<td>Overseas Private Investment Corporation (OPIC)</td>
<td>South Africa</td>
<td>OPIC has financed SolarReserve’s 100 MW Redstone CSP project in South Africa with a US$400m loan.</td>
<td>Generation</td>
</tr>
<tr>
<td>SkyPower</td>
<td>Djibouti</td>
<td>SkyPower Global will develop 200 MW of solar photovoltaic (PV) power projects over the next four years at a total cost of US$440m.</td>
<td>Renewables: Solar</td>
</tr>
</tbody>
</table>
Changing sector dynamics to unlock private investments into the region

This is an opportune time to invest in Africa and the Middle East. Across the region, countries are vying for the capital and capabilities of foreign investors to help meet the huge infrastructure requirements of the P&U sector. With electrification and reforms expected to remain dominant themes in 2016, key factors in transactional activity over the next year include:

- **Continued support — with conditions — from funding agencies**: Ongoing support of international funding agencies, such as AfDB, EBRD, IMF and World Bank, will ramp up investments. Most of this funding comes with reform as a precondition, creating additional and lucrative investment opportunities.

- **Oil prices push major changes**: The Middle East region will continue to feel fiscal pressure, with oil prices predicted to fall further in 2016. This may push major oil-exporting nations toward PPP models to secure major infrastructure investments or encourage increased private participation. Energy subsidy cuts will continue as governments look to cut fiscal deficits. Bahrain, Oman and UAE are all exploring means to reduce dependence on oil and invest in alternate resources, primarily nuclear and renewables. We expect most Middle Eastern countries to begin introducing tariff reforms that reflect market-based pricing.

- **COP21 will boost African renewables**: With the historic Paris Climate Change agreement reached in Q4, renewable energy investments will continue to rise in Africa over 2016, with major grid expansions also scheduled to commence.
Kenya climbed to 31st place in EY’s RECAI 45 index, due largely to a US$2.2b deal with SkyPower to develop 1 GW of PV in the country. In another major deal, OPIC committed US$233m of debt funding to support the 100 MW Kipeto wind farm.

Egypt

The country is continuing its strong push toward renewables, with the government floating new tenders for wind (250 MW) and PV (200 MW) in August, as well as a 50 MW CSP tender. The government has also signed a US$200m deal with Italy’s Building Energy SpA to construct two 50 MW PV plants. Given the momentum generated around renewables since the auction of 4.3 GW of capacity in January 2015, we expect more activity in this space.

UAE

The solar segment is expected to drive most investment activity going forward, with tendering the preferred source for solar asset development in the country. Recently, the Dubai Electricity and Water Authority (DEWA) invited expressions of interest for the 800 MW third stage of the Rashid Al Maktoum solar PV independent power producer (IPP) project. The Abu Dhabi Water and Electricity Authority (ADWEA) has also announced plans to launch a new tender for 350 MW of solar PV capacity by the end of 2015. Nuclear investments will be on the rise, as the country plans to source 25% of total electricity demand from nuclear by 2020.

Zambia

The government is considering rolling out a program similar to Uganda’s successful GET FiT program, which sees power generators supported to build and operate plants while giving end users a discounted energy bill. Funding from the European Union Infrastructure Trust Fund via KfW would make up the difference in a model that we expect to encourage private investment and fast-track construction of new assets.

Source: EY analysis
For more details visit: www.ey.com/energyreform

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Source: EY analysis
For more details visit: www.ey.com/energyreform
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Data source and industry scope

The EY analysis and perspectives within Power transactions and trends are based on global financial releases and Mergermarket data, as well as global engagements conducted by EY member firms over the period 2012 to 2015. They provide an up-to-date assessment of outcomes and trends in the global utilities industry. For more information on the methodology employed in the preparation of this report, please contact Simone Zawadski, Associate Director, Global Transactions Power & Utilities.