



# Power transactions and trends

Q3 2018

# Contents

Overview

Page 3

Americas

Page 12

Europe

Page 22

Asia-Pacific

Page 32

Africa and the Middle East

Page 42

Appendix

Page 49

# Power transactions and trends Q3 2018

## Overview

Q3

Year to date (YTD)

Global deal value

**US\$61.9b**

**US\$241.8b**

Largest segment

**US\$36.5b**

**US\$114.9b**

gas

integrated

Largest region

**US\$28.8b**

**US\$117.1b**

Americas

Europe

Total deals

**140**

**406**

Chart 1: Global P&U deal value by segment

(announced asset and corporate-level deals, Q3 2016–Q3 2018)

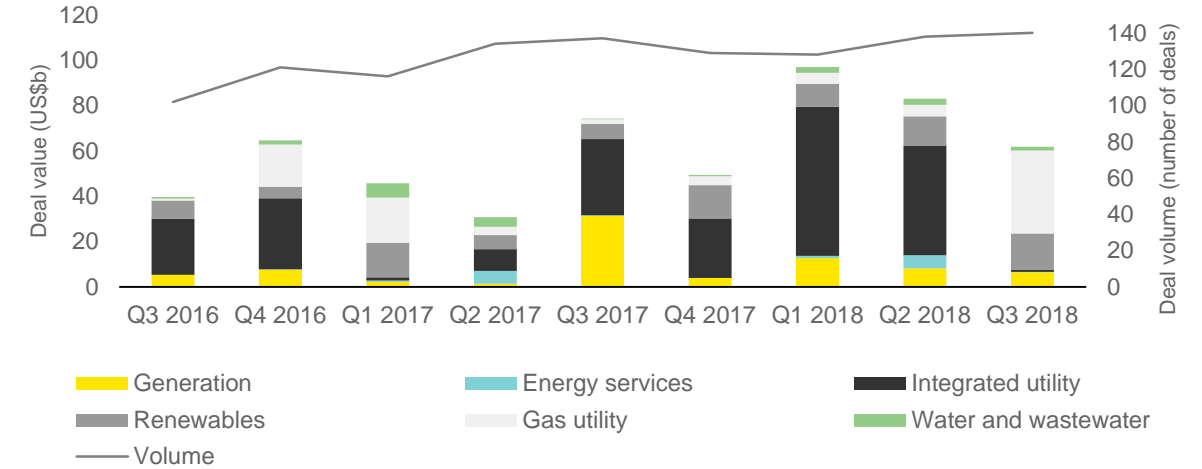
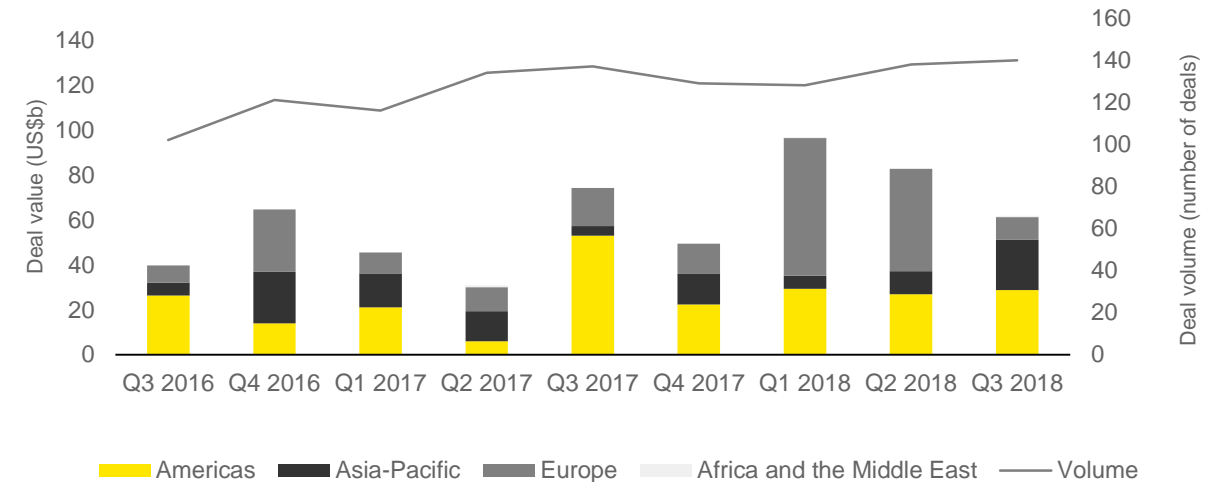


Chart 2: Global P&U deal value and volume by region

(announced asset and corporate-level deals, Q3 2016–Q3 2018)



# Investment in renewables and gas utilities drive M&A amid a dynamic regulatory environment

## Gas utilities transactions at an all-time quarter high

Eleven deals totaled US\$36.5b, driven by large multibillion-dollar deals in Australia and the US and smaller transactions recorded across all four regions. The two-year forward multiples for this asset class are trading at a premium to the sector in all regions. The largest deal was the announced US\$16.3b acquisition of APA Group by a consortium led by Hong Kong-based Cheung Kong Infrastructure (CKI). This deal faces an uphill battle for completion as the Federal Government issued a preliminary view that the deal should be turned down. A formal view will be announced in late November – if approved, CKI will control 68% of the gas transmission and distribution pipelines in Victoria, 86% in South Australia and 72% in Queensland.

## Sustained regulatory uncertainty may impact M&A

All regions are experiencing regulatory uncertainty that, if sustained, could impact the strong M&A environment. The 28 Member States of the EU continue to negotiate the future framework of the electricity market design. In Australia, politicians continue to grapple with implementing a long-term energy policy. In the US, state- and local-level policies and incentives push renewable growth despite federal advocacy for conventional generation.

## Corporate PPAs driving renewable investment

Power purchase agreements (PPAs) are on the rise globally, with a growing interest in Latin America, Asia-Pacific and the Middle East. In part, the increase in PPAs is due to rising demand for cheaper sustainable sources of energy as energy-intensive businesses seek electricity at below-market prices. In October, Spanish companies Avanzalia and TSK Ingeniería y Electricidad SA announced plans to set up a 150 MW solar plant with a 22-year PPA with large energy consumers in Panama. Similarly, in Mexico, France's Engie announced that it will build a 130 MW solar plant and sell energy to local steel producer Gerdau Corsa through a long-term PPA.

## Offshore wind attracting institutional investment in Europe

More than 1.9 GW of greenfield projects in offshore wind was announced across Europe and the Americas, with more investment from financial investors. The US\$5.9b acquisition of a 50% stake in Hornsea 1 by a US-based financial investor demonstrates the growing interest in this asset class. Offshore wind offers financial investors the scale they are chasing, as well as stronger returns than those from typical investments in utilities and network assets.

## Q3 at a glance

### Quarterly investment profile

#### Americas

- Deal value increased 7% to US\$28.8b.
- The quarter saw an US\$18.3b investment in gas utilities.
- Utilities bought US\$4.5b worth of renewable energy assets, including Consolidated Edison's announced US\$2.1b acquisition of renewable assets from Sempra Energy. Sempra's divestment of renewable assets was prompted by shareholder activists who called on the utility to renew its focus on regulated operations.

#### Europe

- Deal value declined 78% to US\$10.1b.
- Renewables led with total investments of US\$8.1b.
- Financial investors dominated, acquiring US\$8.4b of assets, including the biggest deal of the region – Ørsted A/S's sale to GIP of a 50% stake in offshore wind asset (under development) Hornsea 1 for US\$5.9b.

#### Asia-Pacific

- Deal value increased to US\$22.5b from US\$10.3b in Q2.
- Gas utility deals attracted the most investment (US\$16.7b), driven by the US\$16.3b announced acquisition of APA Group in Australia.
- Generation assets remain attractive, particularly in developing countries, attracting US\$1.5b of deal value.

#### Africa and the Middle East

- Brownfield deal value increased to US\$0.5b in Q3 from US\$0.1b in Q2, boosted by a US\$518m transaction for a 39% stake in an Egyptian gas utility.
- Investment in wind energy increased with Saudi Arabia planning to tender 400 MW of capacity.

## Q3 at a glance (continued)

### Capital outlook

#### Americas

- Investment in wind energy is expected to ramp up and then decline as the pipeline is developed prior to the phased reduction of the production tax credit incentive in the US.
- New technology, particularly electric vehicles (EVs), will attract more investment from a diverse set of market participants, including transport incumbents looking to drive sales, oil companies hedging against an electric future and utilities looking to grow their rate bases.
- PPAs will continue their momentum in Latin American countries and in the US.

#### Europe

- Investors are focusing on offshore wind development, with utilities, including Vitol and EnBW, investing in capacity.
- Energy storage is set for a boost, with Eelpower announcing plans to build 1 GW of battery storage in the UK.

#### Asia-Pacific

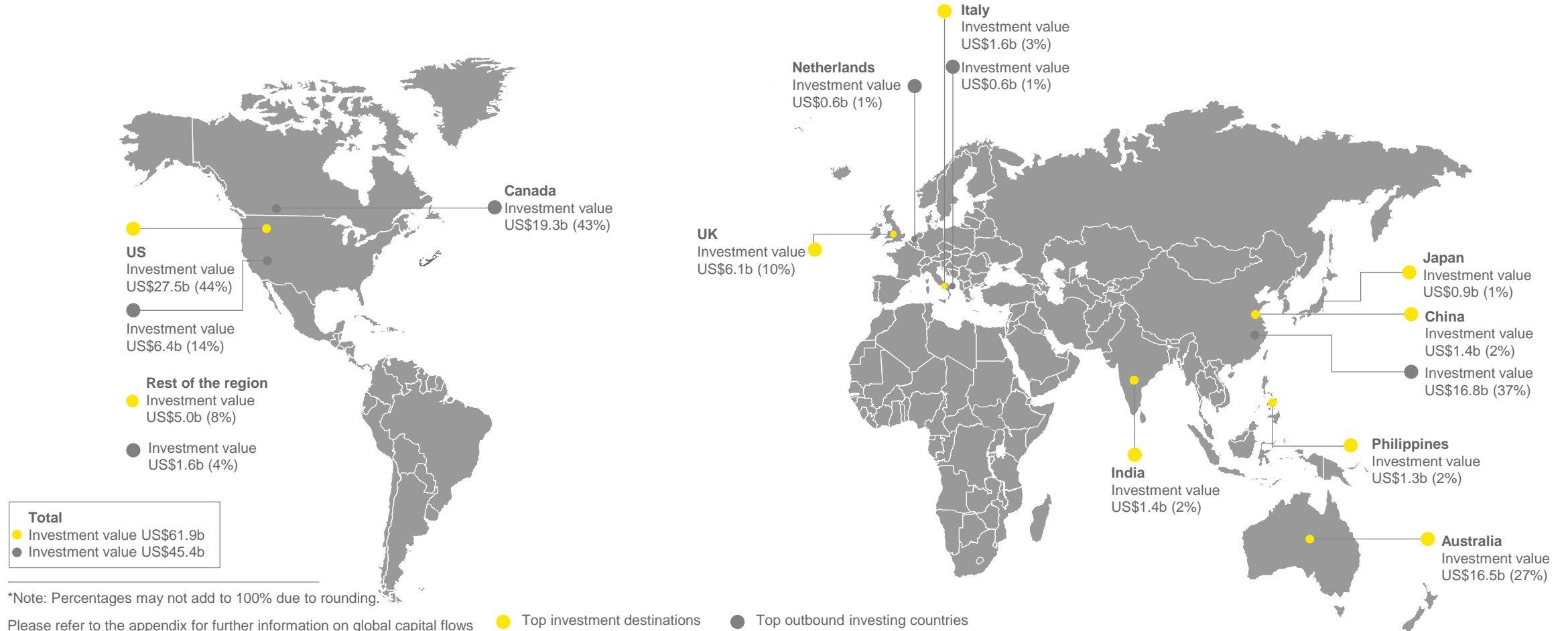
- Wind energy investment will increase, with key projects planned in India.
- Solar energy will remain an attractive investment.
- Battery storage investment is being led by Australian initiatives, including a US\$100m commitment by the South Australian State Government to deploy batteries in households.

#### Africa and the Middle East

- Middle Eastern utilities are focusing on water and wastewater assets. Saudi Arabia plans to invest US\$10b in desalinated water projects and US\$1b in sewage water treatment plants.
- African governments seek private capital and aid to progress electrification, with a majority of this funding committed to renewables.

# Global capital flows – Q3 2018

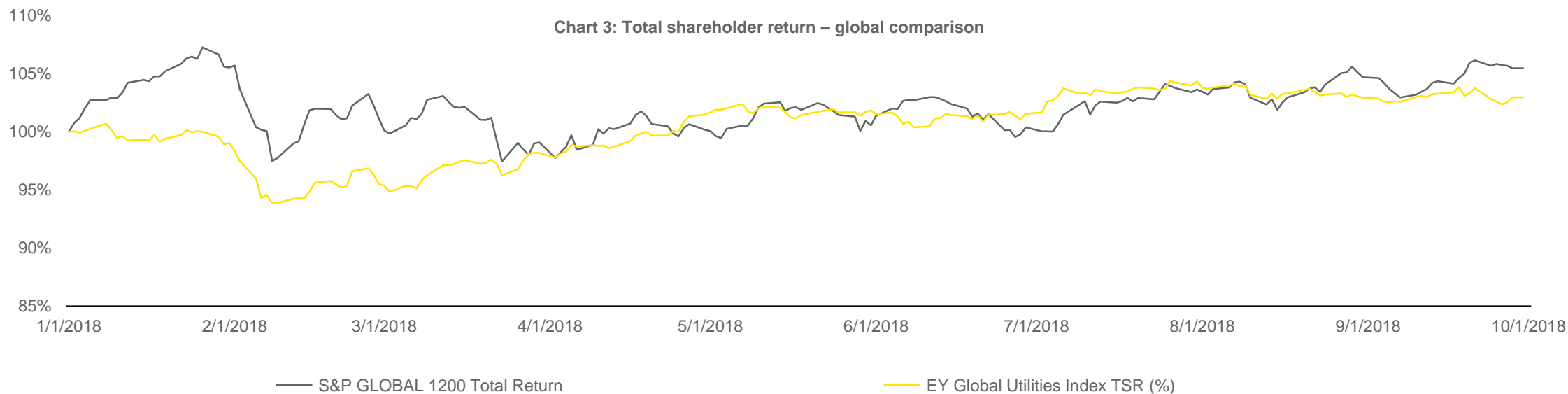
## Investment activity globally by geography – Q3 2018\*



# Global returns

- ▶ The global market (as benchmarked by the S&P Global 1200) continued its upward trend since 2016. Despite a strong start to the year, returns dropped off and then climbed back steadily to 5.4% at the end of Q3. Global uncertainty, growing protectionism and trade wars are creating slightly lower returns globally as compared with the last two years.
- ▶ The EY Global Utilities Index<sup>1</sup> underperformed the market, both year-to-date (YTD) and quarter-to-date (QTD), returning 1% and 2.9%, respectively.
- ▶ Despite a continued low global interest rate environment, which is favorable for utilities, policy instability, declining demand due to energy efficiency, low wholesale prices and continued sector disruption continue to impact the sector globally.

	Quarter-to-date TSR	Year-to-date TSR
	TSR in % (from 1 July 2018 to 30 September 2018)	TSR in % (from 1 January 2018 to 30 September 2018)
S&P Global 1200	5.4%	5.4%
EY Global Utilities Index	1.0%	2.9%

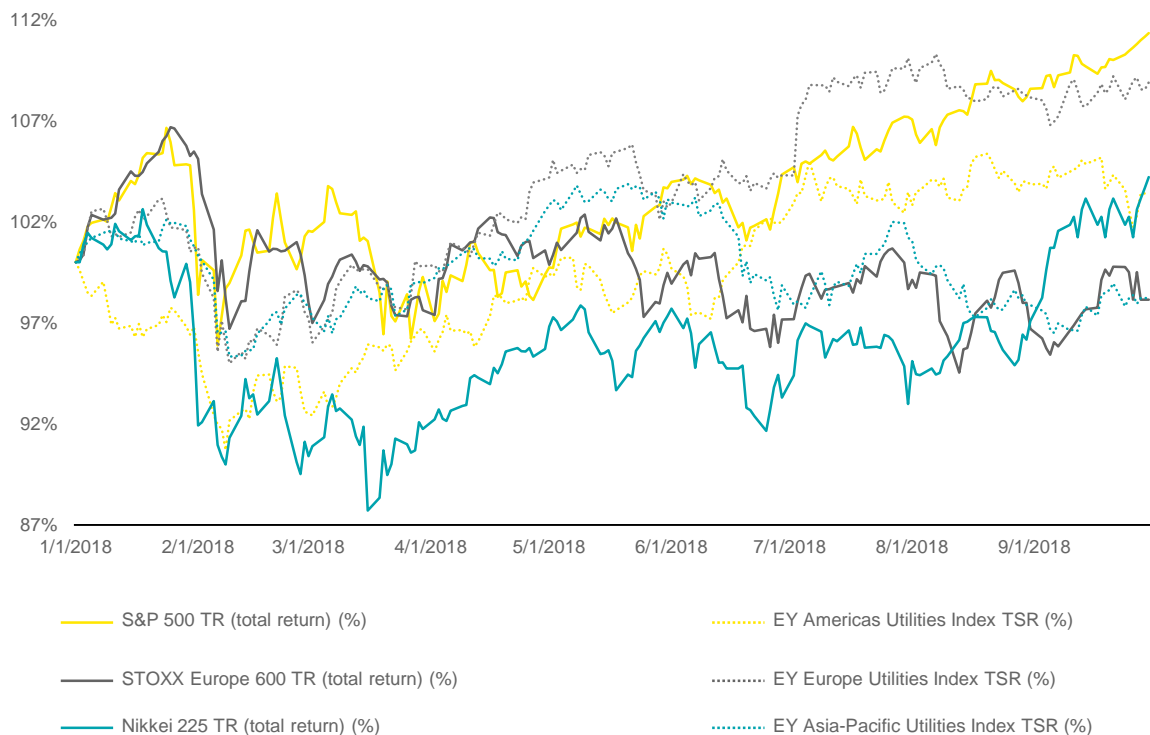


<sup>1</sup>The EY Global Utilities Index benchmarks the returns of 229 utilities globally using data sourced from S&P Capital IQ and other publicly available information. For a comprehensive list of utilities contained within the analysis, please refer to the appendix.



# Regional TSR

Chart 4: Total shareholder return – regional comparison



Quarter-to-date TSR	Year-to-date TSR
TSR in % (from 1 July 2018 to 30 September 2018)	TSR in % (from 1 January 2018 to 30 September 2018)

Americas		
S&P 500	6.3%	11.3%
EY Americas Utilities Index	1.5%	3.4%
Europe		
STOXX Europe 600	1.0%	-1.8%
EY Europe Utilities Index	3.1%	8.9%
Asia-Pacific		
Nikkei 225	10.4%	4.2%
EY Asia-Pacific Utilities Index	-1.1%	-1.8%

## Valuations

Americas	Europe	Asia-Pacific
<ul style="list-style-type: none"> <li>The YTD return of the EY Americas Utilities Index<sup>2</sup> was 3.4%, which is significantly lower than the regional market (as benchmarked by the S&amp;P 500 index), which has been steadily increasing since mid-March, returning a YTD TSR value of 11.3%. The QTD returns for utilities in the Americas were also significantly lower than the overall market.</li> </ul>	<ul style="list-style-type: none"> <li>The YTD TSR of the EY European Utilities Index<sup>3</sup> was 8.9%, which is significantly higher than the YTD TSR for the European benchmark index STOXX Europe 600, which performed poorly, returning a mere -1.8% for the year. The utilities index followed the market until the end of April, when the STOXX Europe 600 began to decline and the utilities index started to steadily rise. Utilities also outperformed the index for the quarter, returning 3.1%, compared with the benchmark value of 1%.</li> </ul>	<ul style="list-style-type: none"> <li>The EY Asia-Pacific Utilities Index<sup>4</sup> performed significantly worse than the Nikkei 225, the Asia-Pacific regional benchmark index. Asia-Pacific utilities returned -1.8% YTD compared with the market at 4.2%. The QTD and YTD returns of the EY Asia-Pacific Utilities Index were also significantly lower than the returns from other regional EY utilities indices.</li> </ul>

<sup>2</sup>EY analysis is based on data sourced from S&P Capital IQ and other publicly available data. The EY Americas Utilities Index benchmarks the returns of 101 utilities headquartered in the Americas, the EY European Utilities Index benchmarks the returns of 54 utilities headquartered in Europe, the EY Asia-Pacific Utilities Index benchmarks the returns of 74 utilities headquartered in Asia-Pacific. For a comprehensive list of utilities contained within the analysis, please refer to the appendix.  
<sup>3</sup>Ibid.  
<sup>4</sup>Ibid.



# TSR and valuations segment dashboard

	Q3		
	Quarter-to-date TSR	Year-to-date TSR	EV/FY2 EBITDA
	TSR in % (from 1 July 2018 to 30 September 2018)	TSR in % (from 1 January 2018 to 30 September 2018)	At 30 September 2018
Large market capitalization integrated	2.1%	2.8%	10.0x
Medium and small market capitalization integrated	0.8%	-1.2%	8.3x
Gas utility	0.8%	3.8%	10.0x
Generation	8.1%	22.5%	9.7x
Renewables	0.8%	4.5%	8.9x
Water and wastewater	4.2%	4.1%	12.3x
<b>EY Americas Utilities Index</b>	<b>1.5%</b>	<b>3.4%</b>	<b>8.3x</b>
Large market capitalization integrated	4.2%	17.2%	7.3x
Medium and small market capitalization integrated	-0.8%	0.3%	4.2x
Gas utility	-1.8%	0.7%	8.9x
Generation	20.7%	19.6%	5.6x
Renewables	4.4%	19.8%	9.6x
Water and wastewater	-3.5%	-11.3%	8.1x
<b>EY European Utilities Index</b>	<b>3.1%</b>	<b>8.9%</b>	<b>7.0x</b>
Large market capitalization integrated	1.6%	3.2%	22.3x
Medium and small market capitalization integrated	3.2%	5.2%	10.54x
Gas utility	-0.3%	20.2%	12.8x
Generation	-4.7%	-11.9%	7.7x
Renewables	-6.7%	-12.0%	8.5x
Water and wastewater	-3.7%	-16.3%	7.9x
<b>EY Asia-Pacific Utilities Index</b>	<b>-1.1%</b>	<b>-1.78%</b>	<b>11.1x</b>

## Americas

- ▶ The generation segment TSR was the highest performing segment in the region, and the only segment consistently outperforming the market, while the medium and small market capitalization integrated assets TSR performed the worst.
- ▶ The water and wastewater segment TSR performed better than in other regions.
- ▶ The Americas utilities EV/FY2 EBITDA sector traded at a discount when compared with the Q2 average of 9.7x. Water and wastewater assets traded higher than the forward multiple of this asset across other geographies.

## Europe

- ▶ The generation segment QTD TSR was the highest performing segment in the region, while the water and wastewater segment TSR performed the worst.
- ▶ The large market capitalization integrated segment TSR performed better than in other regions.
- ▶ The European utilities sector traded at the lowest EV/FY2 EBITDA multiple during Q3, and renewables traded the highest of all asset classes in Europe and recorded the highest performance for renewables across all regions.

## Asia-Pacific

- ▶ Gas utilities were the highest performing YTD TSR segment in the region, and the only segment consistently outperforming the market, while the renewables segment TSR performed the worst, with the worst returns across all regions.
- ▶ The medium and small market capitalization integrated segment TSR outperformed other regions.
- ▶ The Asia-Pacific utilities sector EV/FY2 EBITDA traded highest across all geographies and slightly higher than in Q2.

Good	TSR >20% higher than the regional sector average; EV/FY2 EBITDA >20% discount (undervalued) compared with the regional sector average
Moderate	TSR 0% to 20% higher than the regional sector average; EV/FY2 EBITDA between a 0% to 20% discount (undervalued) compared with the regional sector average
Poor	TSR 0% to 20% lower than the regional sector average; EV/FY2 EBITDA between a 0% to 20% premium (overvalued) compared with the regional sector average
Very poor	TSR performance > 20% lower than the regional sector average; EV/FY2 EBITDA > 20% premium (overvalued) compared with the regional sector average

Note: EY analysis is based on data sourced from S&P Capital IQ. Please see the appendix for the detailed definitions, the company segment definitions and the company tagging for the valuations analysis.

# EY Global Transaction Advisory Services P&U contacts



## Miles Huq

EY Global P&U TAS Leader  
Baltimore, Maryland, US

Miles Huq became the EY Global Power & Utilities Transactions Advisory Leader in April 2018. Based in the US Northeast Region, Miles has more than 20 years' experience in corporate finance, with a particular focus on P&U. Miles holds an MBA from Duke University, and he is also a certified public accountant (CPA) in Maryland and is a member of the American Institute of Certified Public Accountants. Miles has assisted and advised on more than 200 M&A engagements involving major integrated electric, gas and water utilities, as well as renewable energy and cleantech transactions.

+1 410 783 3735  
[miles.huq@ey.com](mailto:miles.huq@ey.com)

@MilesHuq



## Sara Richardson

EY Global TAS P&U Associate  
Director and Resident

+61 7 3243 3758  
[sara.richardson@au.ey.com](mailto:sara.richardson@au.ey.com)

@sarahrichardson2



## Shikhar Gupta

EY Global P&U Analyst

+91 124 470 1233  
[shikhar.gupta@gds.ey.com](mailto:shikhar.gupta@gds.ey.com)

@ShikharGupta\_EY



## Anjushi Joshi

EY Global P&U Analyst

+91 124 619 2734  
[anjushi.joshi@gds.ey.com](mailto:anjushi.joshi@gds.ey.com)

@anjushi\_joshi

An aerial photograph of a coastline at sunset. The sky is filled with soft, horizontal bands of orange, yellow, and purple. The water of the bay is calm, reflecting the colors of the sky. A dark, silhouetted peninsula is visible on the left side of the frame. The overall mood is serene and peaceful.

# Americas

Shareholder activism continues in the region

# Power transactions and trends Q3 2018

## Americas

“The announced sale of Sempra Energy’s renewable energy assets highlights the impact of ongoing shareholder activism in the region.”

Miles Huq,  
EY Global P&U TAS Leader

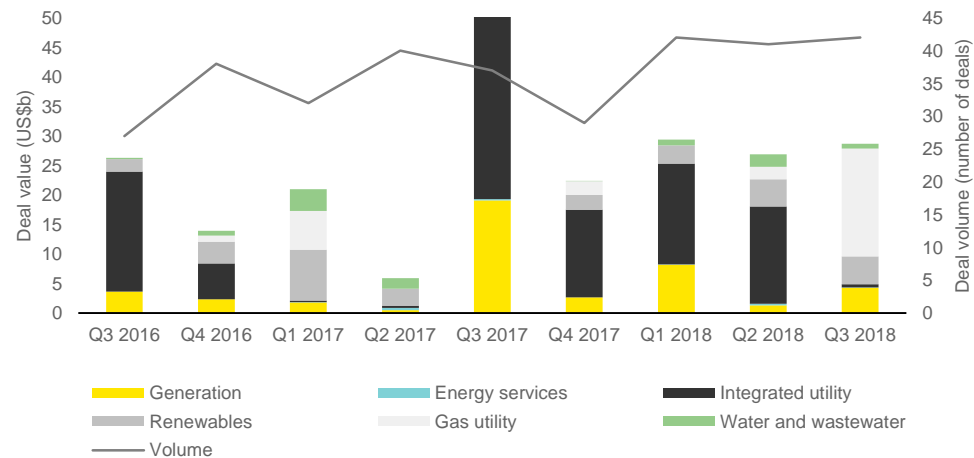
### US\$28.8b

deal value, 7% increase from Q2

### US\$18.3b

deal value in gas utilities

Chart 5: Americas deal value and volume, by segment  
(announced asset and corporate-level deals, Q3 2016–Q3 2018)



### Transaction highlights

- ▶ **Corporate investors lead dealmaking:** Corporate investors conducted 31 deals that contributed 89% or US\$25.6b of the region’s deals.
- ▶ **Utilities acquire renewable energy assets:** The quarter saw utilities buy US\$4.5b worth of renewable energy assets, including Consolidated Edison’s announced US\$2.1b acquisition of renewable assets from Sempra Energy – the largest clean energy deal in the region.
- ▶ **Shareholder activism continues in the US:** The Sempra Energy deal was a result of continued efforts by two prominent shareholder activists taking an active role in reshaping the market. Since 2017, these activists have taken positions in NRG Energy, FirstEnergy and, now, Sempra Energy that have prompted these companies to fundamentally shift their strategic direction.

## US coal generation consumption falls as utilities look to new technologies

### State-based incentives push renewable growth despite federal support for coal

- ▶ The end of the quarter saw US President Donald Trump nominate Bernard McNamee – who is considered a proponent of conventional generation – to the Federal Energy Regulatory Commission (FERC).
- ▶ US power producers generated almost 6% less electricity from coal in the first half of the year even as total generation rose almost 5% and gas-fired generation was up 17%.
- ▶ In September, California passed a bill requiring 100% of generation to come from renewable sources by 2045.
- ▶ Engie, the French utility, has announced plans to close its coal-fired plants in Brazil after talks with ContourGlobal to sell 700 MW of capacity fell through.

### Energy blockchain project launched in New York

- ▶ Four utilities based in New York – Avangrid, Consolidated Edison, New York Power Authority and National Grid – have teamed up to study the potential for blockchain technology in the state's power system. The utilities will explore the use of blockchain in wholesale commodity trading and peer-to-peer trading and study its adoption for facilitating EV charging.

### Increased investment in EV charging infrastructure

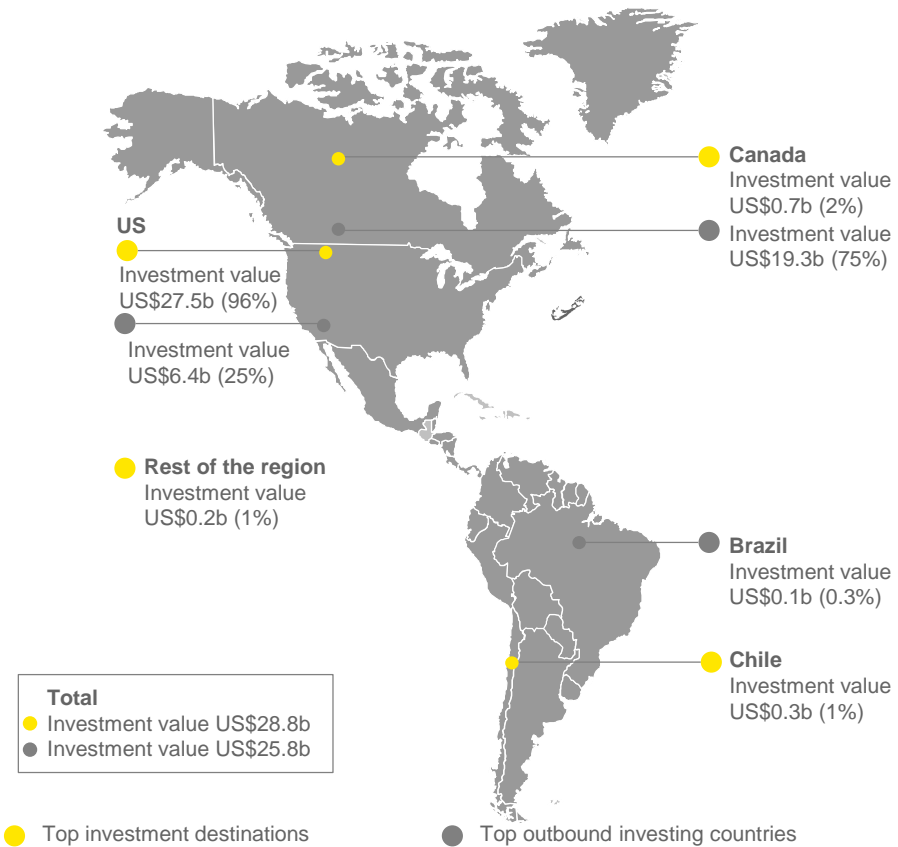
- ▶ DTE Energy and Consumers Energy, both US integrated utilities, lodged proposals with the Michigan Public Service Commission for compensation to provide EV rebates to customers. DTE's US\$13m pilot program requires customers who apply for a rebate to enroll in a "time of use" program. DTE hopes this will incentivize customers to charge their vehicles during off-peak periods, which should save the organization between US\$4m and US\$20m in infrastructure upgrades over three years.
- ▶ Duke Energy Florida announced the launch of an EV charging station pilot (Park and Plug) that will install 530 EV charging stations across Florida.
- ▶ Baltimore Gas and Electric Co., Delmarva Power & Light Co., Potomac Electric Power Co. and Potomac Edison Co. have announced plans to launch a program to install 24,000 EV charging stations across Maryland.

### Corporate-backed PPAs gaining momentum

- ▶ In September, PPA-backed renewables developments were announced in Brazil, Panama, Mexico, Chile and Colombia.
- ▶ 2018 has been a record year for corporate PPAs in the US on an MW basis, with 4.8 MWs procured year-to-date. This includes 20 first-time corporate buyers. Interest in corporate PPAs is expected to increase in the US.

# US remains the top investment destination

Americas regional capital flows – Q3 2018\*



\*Note: Percentages may not add to 100% due to rounding.

96% of deal value was conducted in the US market.

The majority of transactions – 72% (US\$20.6b) – were cross-border deals.

“The Americas continues to attract significant capital, a trend that will continue as higher economic growth leads to greater energy consumption and increasing investments in the sector.”

Miles Huq,

EY Global P&U TAS Leader

## Top five Americas deals – Q3 2018

Announcement date	Target	Target country/bidder country	Bidder	Deal value (US\$)	Bidder rationale	Segment
August/September	Enbridge Energy Partners LP (66.06% stake), Enbridge Energy Management, L.L.C. (88.33% stake), Spectra Energy Partners, LP (16.89% stake)	US/Canada	Enbridge Inc.	18.3b	Helps streamline bidder's corporate and capital structures, improve its credit rating and mitigate impacts associated with regulatory changes that will impact the cash flows of master limited partnerships (MLPs)	Gas utility
5 September	Sempra Energy (non-utility operating solar assets, solar and battery storage development projects, and one wind facility)	US/US	Consolidated Edison Inc.	2.1b	Strengthens Consolidated Edison's position in the renewable energy market and will generate synergies due to proximity of plant locations	Renewables: solar, battery and wind
5 September	NextEra Energy, LLC (11 wind farms with a cumulative capacity of 1.4 GW)	US/US	NextEra Energy Partners, LP	1.3b	Gives bidder access to high-quality, contracted renewable energy assets and is in line with its strategy to expand its geographical footprint	Renewables: wind
24 September	Dominion Energy (two combined-cycle plants)	US/US	Starwood Energy Group Global, LLC	1.2b	Supports bidder's strategy of buying or building core infrastructure assets in attractive locations close to customer demand	Generation
29 July	Bayonne Energy Center, LLC	US/US	NHIP II Bayonne Holdings LLC	0.9b	Supports bidder's strategy to invest across the energy sector in developed markets	Generation

Consolidated Edison acquired 981 MW of renewable energy and battery storage projects from Sempra, making it one of the leading clean energy asset owners.

Note: All deals are announced deals, and the values indicated are disclosed enterprise values comprised of equity and debt components.



## Valuations snapshot – Q3 2018

1

In the Americas, the utilities segment underperformed the broader market. The EY Americas Utilities Index recorded a TSR of 1.5% for the quarter, with a year-to-date return of 3.4%. These returns are low when compared with the S&P 500 benchmark, which returned 6.3% and 11.3%, respectively.

2

The generation segment was the highest performing segment in the region and the only segment outperforming the market with a year-to-date return of 22.5%. This is due to exceptional performance by NRG Energy and Vistra Energy as they underwent significant corporate restructuring.

3

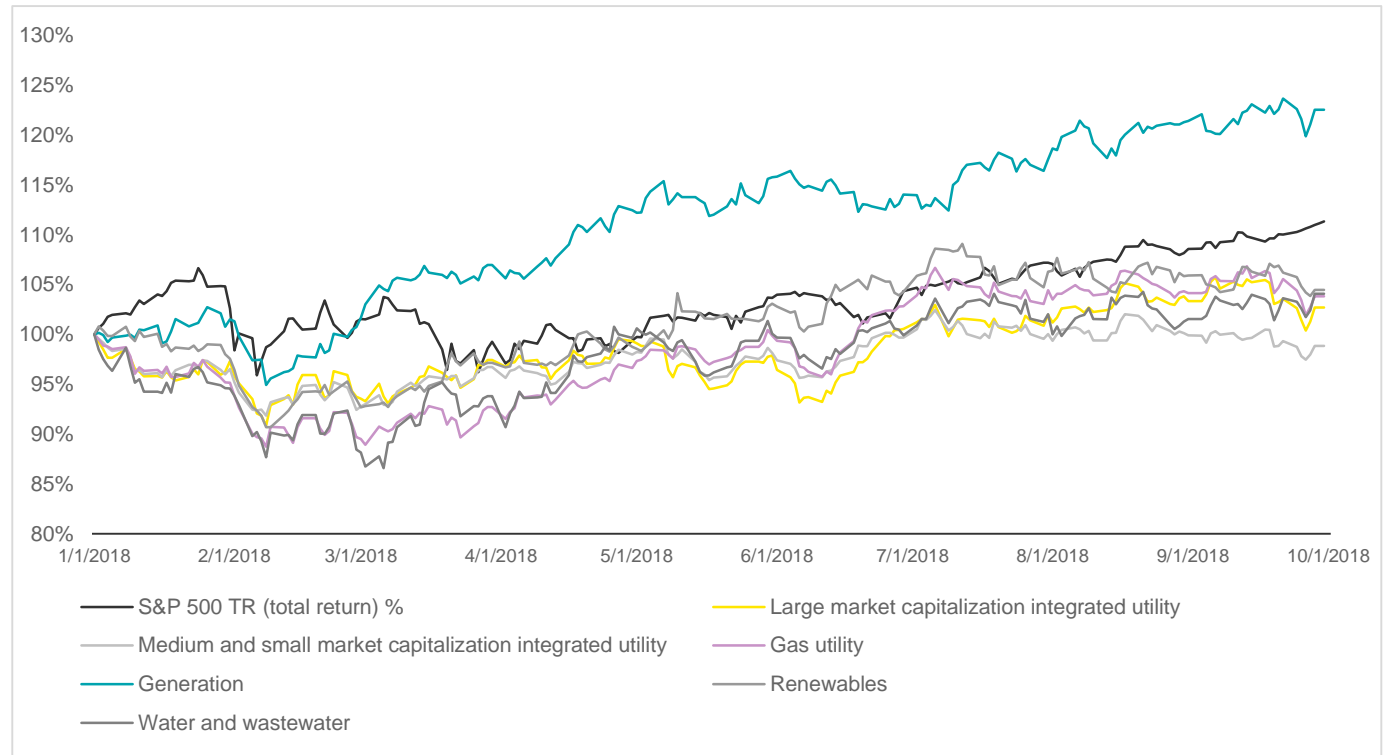
The EV/FY2 EBITDA of the sector was 8.3x, compared with 9.7x in Q2, signaling a decline in sector valuations.

4

Water and wastewater assets traded at a premium to sector EV/FY2 EBITDA at 12.3x – the highest multiple for water and wastewater assets across all geographies.

### Return over time – from base date

Chart 6: Total shareholder return by segment (1 January 2018–30 September 2018)



Note: EY analysis is based on data sourced from S&P Capital IQ. Please see the appendix for the detailed definitions, the company segment definitions and the company tagging for the valuations analysis.

## Valuations and TSR snapshot – Q3 2018

	Americas TSR		Americas valuations
	Quarter-to-date TSR	Year-to-date TSR	EV/FY2 EBITDA
	TSR in % (from 1 July 2018 to 30 September 2018)	TSR in % (from 1 January 2018 to 30 September 2018)	At 30 September 2018
Large market capitalization integrated	2.1%	2.8%	10.0x
Medium and small market capitalization integrated	0.8%	-1.2%	8.3x
Gas utility	0.8%	3.8%	10.0x
Generation	8.1%	22.5%	9.7x
Renewables	0.8%	4.5%	8.9x
Water and wastewater	4.2%	4.1%	12.3x
EY Americas Utilities Index	1.5%	3.4%	8.3x

### TSR performance

- ▶ The generation segment was the highest performing segment in the region and the only segment to outperform the market. This performance is supported by the large restructurings at Vistra and NRG.
- ▶ Medium and small market capitalization integrated assets performed the worst across the Americas segments.
- ▶ The water and wastewater segment performed better than its global peer set.

### Valuations performance

- ▶ The Americas utilities sector traded at a discount to Q2, signaling a decline in sector valuations.
- ▶ Water and wastewater continue to trade at high multiples compared with other Americas segments and international water and wastewater companies.

Good	TSR >20% higher than the regional sector average; EV/FY2 EBITDA > 20% discount (undervalued) compared with the regional sector average
Moderate	TSR 0% to 20% higher than the regional sector average; EV/FY2 EBITDA between a 0% to 20% discount (undervalued) compared with the regional sector average
Poor	TSR 0% to 20% lower than the regional sector average; EV/FY2 EBITDA between a 0% to 20% premium (overvalued) compared with the regional sector average
Very poor	TSR performance > 20% lower than the regional sector average; EV/FY2 EBITDA > 20% premium (overvalued) compared with the regional sector average

Note: EY analysis is based on data sourced from S&P Capital IQ. Please see the appendix for the detailed definitions, the company segment definitions and the company tagging for the valuations analysis.

## Performance snapshot – Q3 2018



### Large integrated utility

- ▶ The large market capitalization integrated segment returned a quarterly TSR of 2.12% and a year-to-date TSR of 2.80%.
- ▶ The quarterly TSR was above the regional index average of 1.46% for the quarter and below the regional YTD average of 3.43%.
- ▶ The two-year forward EV/EBITDA multiple for large market capitalization integrated traded at 10.0x at Q3, which is a premium of 20.27% to the average regional sector multiple, indicating potential overvaluation of this segment compared with others.

- ▶ The gas utility segment returned a quarterly TSR of 0.83% and a year-to-date TSR of 3.82%.
- ▶ The quarterly TSR was below the regional index average of 1.46% for the quarter and above the regional YTD average of 3.43%.
- ▶ The two-year forward EV/EBITDA multiple for gas utility traded at 10.0x at Q3, which is a premium of 20.30% to the average regional sector multiple, indicating potential overvaluation of this segment compared with others.

### Gas utility



### Medium and small integrated utility

- ▶ The medium and small market capitalization integrated segment returned a quarterly TSR of -0.80% and a year-to-date TSR of -1.16%.
- ▶ The quarterly TSR was below the regional index average of 1.46% for the quarter and below the regional YTD average of 3.43%.
- ▶ The two-year forward EV/EBITDA multiple for medium and small market capitalization integrated traded at 8.3x at Q3, which is a discount of -1.01% to the average regional sector multiple, indicating potential undervaluation of this segment compared with others.

- ▶ The renewables segment returned a quarterly TSR of 0.81% and a year-to-date TSR of 4.48%.
- ▶ The quarterly TSR was below the regional index average of 1.46% for the quarter and above the regional YTD average of 3.43%.
- ▶ The two-year forward EV/EBITDA multiple for renewables traded at 8.9x at Q3, which is a premium of 7.09% to the average regional sector multiple, indicating potential overvaluation of this segment compared with others.

### Renewables



### Generation

- ▶ The generation segment returned a quarterly TSR of 8.13% and a year-to-date TSR of 22.55%.
- ▶ The quarterly TSR was above the regional index average of 1.46% for the quarter and above the regional YTD average of 3.43%.
- ▶ The two-year forward EV/EBITDA multiple for generation traded at 9.7x at Q3, which is a premium of 16.04% to the average regional sector multiple, indicating potential overvaluation of this segment compared with others.

- ▶ The water and wastewater segment returned a quarterly TSR of 4.17% and a year-to-date TSR of 4.08%.
- ▶ The quarterly TSR was above the regional index average of 1.46% for the quarter and above the regional YTD average of 3.43%.
- ▶ The two-year forward EV/EBITDA multiple for water and wastewater traded at 12.3x at Q3, which is a premium of 47.75% to the average regional sector multiple, indicating potential overvaluation of this segment compared with others.

### Water and wastewater



## M&A outlook and investment hotspots

**US\$800m**

incentive for battery storage  
provided by Californian  
Government

“Corporate demand for renewable PPAs is helping ease the decline that developers are expecting due to the phaseout of the production tax credit in 2019 and the wind-down of the investment tax credit in 2021.”

**Miles Huq,**  
EY Global P&U TAS Leader

**Investment in wind energy will accelerate – and then deflate:** US wind investment looks set to increase in the short term: Apex Clean Energy will build two wind parks totaling 800 MW in Texas for US\$1.2b; the New York Public Service Commission plans to launch a tender for 800 MW of offshore capacity by Q4 2018; the New Jersey Board of Public Utilities has announced plans to launch a 1.1 GW tender for offshore wind power during 2018. However, US investments in wind will begin to decline as the production tax credit reduces by 60% in 2019. Analysts predict US wind installations to fall by half in 2021.

**Interest in new technology to continue:** In early October, California passed into law S.B.700, a bill that extends the Self-Generation Incentive Program for five years to 2025 providing an additional \$800m in incentives on the installation of behind-the-meter energy storage systems. Consolidated Edison Inc. is forming a joint venture with Johnson Controls to sell battery storage as part of a push to advance the adoption of the technology with building owners.

**Argentina to emerge as attractive investment destination:** In a bid to boost renewable energy uptake, the Government of Argentina has launched a tender to construct a high-voltage transmission line under its newly created public-private partnerships scheme.

# EY Americas Transaction Advisory Services P&U contacts

## Miles Huq

EY Global P&U TAS Leader  
US Northeast P&U TAS Leader  
Baltimore, Maryland, US

+1 410 783 3735  
[miles.huq@ey.com](mailto:miles.huq@ey.com)

## Stephanie Chesnick

US P&U TAS Leader  
Houston, Texas, US

+1 713 750 8192  
[stephanie.chesnick@ey.com](mailto:stephanie.chesnick@ey.com)

## Mitch Fane

US Southwest P&U TAS Leader  
Houston, Texas, US

+1 713 750 4897  
[mitchell.fane@ey.com](mailto:mitchell.fane@ey.com)

## Robert A Jozwiak

US Central P&U TAS Leader  
Chicago, Illinois, US

+1 312 879 3461  
[robert.jozwiak@ey.com](mailto:robert.jozwiak@ey.com)

## Lucio Teixeira

Latin America South P&U TAS Leader  
Sao Paulo, Brazil

+55 11 2573 3008  
[lucio.teixeira@br.ey.com](mailto:lucio.teixeira@br.ey.com)

## Robert Leonard

US Southeast P&U TAS Leader  
Charlotte, North Carolina, US

+1 704 335 4236  
[rob.leonard@ey.com](mailto:rob.leonard@ey.com)

## Rafael Aguirre Sosa

Latin America North P&U TAS Leader  
México, D.F., Mexico

+52 55 5283 8650  
[rafael.aguirre@mx.ey.com](mailto:rafael.aguirre@mx.ey.com)

An aerial photograph of a coastline at sunset. The sky is filled with horizontal bands of orange, yellow, and purple. The sun is low on the horizon, casting a long, shimmering reflection across the water. A dark, forested peninsula is visible on the left side of the frame, curving into a bay. The water in the bay is a deep blue, while the water further out is a lighter, shimmering blue. The overall mood is serene and beautiful.

# Europe

Renewables sustain an otherwise weak quarter

# Power transactions and trends Q3 2018

## Europe

“Offshore wind offers financial investors the scale they are chasing, as well as strong returns.”

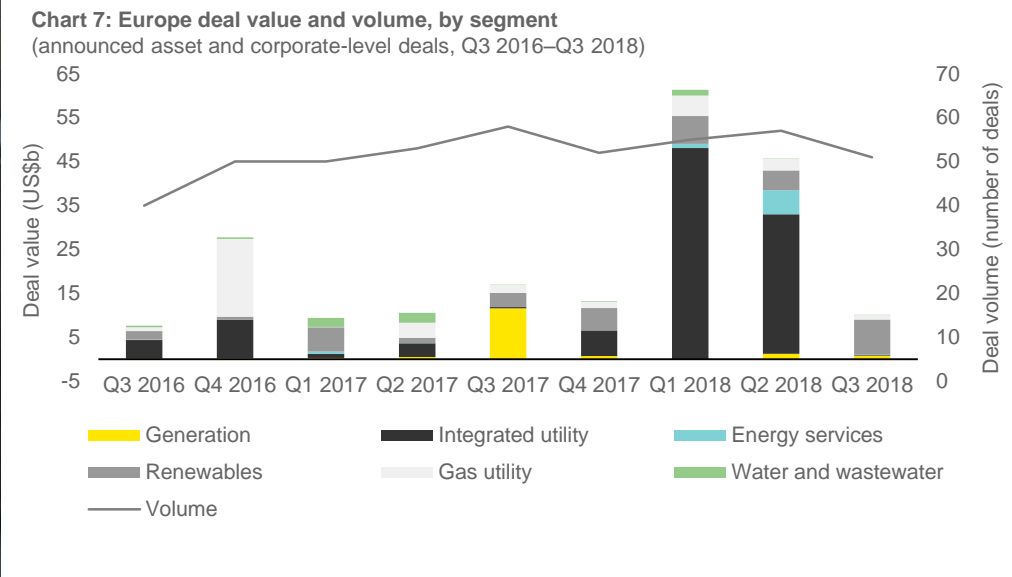
**Miles Huq,**  
EY Global P&U TAS Leader

## US\$10.1b

deal value, 78% decline from Q2

## US\$8.1b

Deals in renewables, forming 76% of total deal value



### Transaction highlights

- ▶ **Largest deal in offshore wind:** Global Infrastructure Partners (GIP), a US-based private equity firm, agreed to acquire a 50% stake in Hornsea 1, an under-construction, 1.2 GW offshore wind farm, from Danish energy company Ørsted A/S.
- ▶ **Financial investors take lead:** Financial investors acquired US\$8.4b of assets, 83% of deal value.
- ▶ **Utilities divest generation assets:** E.ON sold its Malzenice steam power plant in Slovakia to Slovakian distribution company Zapadoslovenska Energetika AS for an undisclosed consideration. RWE sold RWE Generation Belgium for an undisclosed consideration to Belgian chemicals company Ineos NV.

## European utilities slow on M&A

### Energy sector attracts diverse investors

- ▶ European utilities conducted only seven deals totaling US\$0.68b, with six of those being domestic.
- ▶ Most deal value (US\$8.4b) and volume (24 deals) were done by financial investors. Cross-border investments contributed most deal value (US\$6.1b).
- ▶ Sector convergence is bringing new players to the market. Oil and gas companies Repsol and Total SA acquired renewable and generation assets this quarter.

### Work continues on revised energy market design

- ▶ Creating an efficient EU electricity market with clear, nondiscriminatory rules, stable regulatory frameworks and consistent signals for investors remains a challenge for the European Commission, Parliament and the 28 Member States in the EU Council.
- ▶ Negotiations have intensified around the future framework of the electricity market design, including remuneration for capacity mechanisms.
- ▶ The conclusion of talks in Q4 should help create investment certainty.

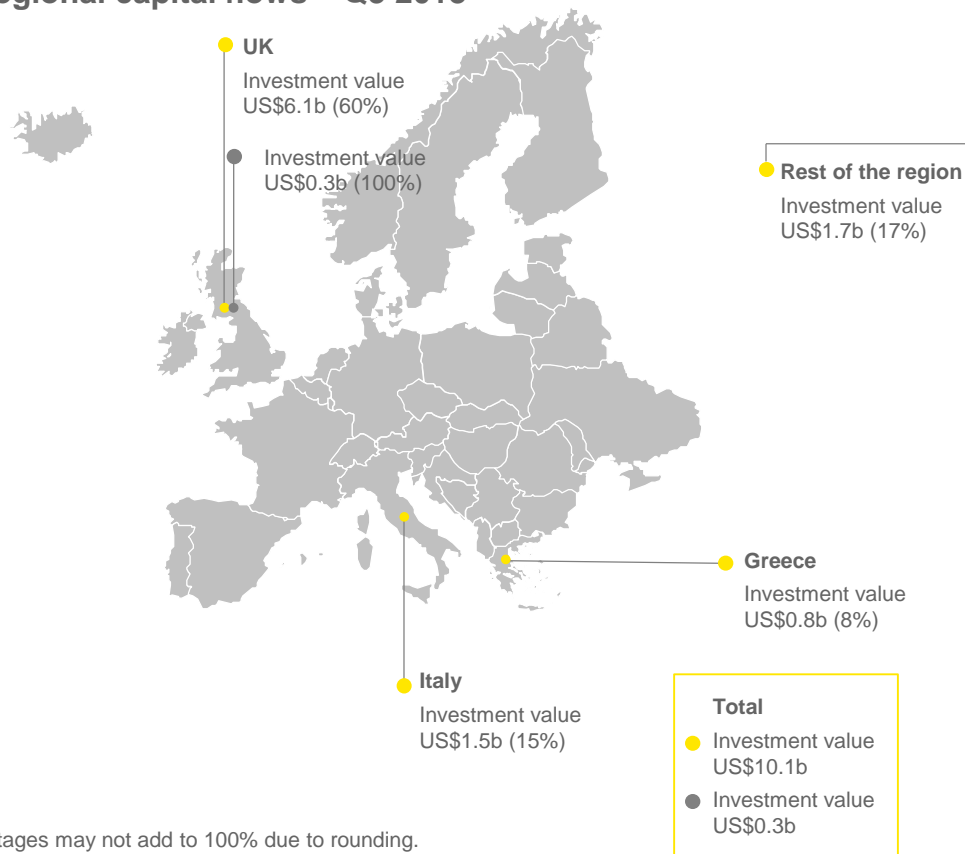
### Financial investment is driving up valuations, deterring corporate investments

- ▶ Deep-pocketed financial sponsors are expanding their investment portfolio from traditional regulated business and generation assets to renewable energy assets. This trend is pushing up valuations, as financial investors have preferential access to credit with more favorable terms than corporates.



# European financial sponsors and corporates slow outbound investment

## Europe regional capital flows – Q3 2018\*



\*Note: Percentages may not add to 100% due to rounding.

● Top investment destinations    ● Top outbound investment regions

UK dominated inbound investment due to the US\$5.9b GIP acquisition.

“The Hornsea 1 farm-down is a landmark transaction which will create substantial value for our shareholders and reduce single asset exposure.”

Ole Kjems Sørensen,  
Executive Vice President for M&A,  
Partnerships and Asset Management at Ørsted<sup>5</sup>

<sup>5</sup><https://globenewswire.com/news-release/2018/09/18/1572748/0/en/Ørsted-divests-50-of-Hornsea-1-Offshore-Wind-Farm.html>

## Top five Europe deals – Q3 2018

Announcement date	Target	Target country/bidder country	Bidder	Deal value (US\$)	Bidder rationale	Segment
26 July	Hornsea 1 (50% stake)	UK/US	Global Infrastructure Partners (GIP)	5.9b	Aligns with GIP's strategy of acquiring stakes in under-construction renewable assets with a focus on long-term returns	Renewables: wind
19 July	RTR Rete Rinnovabile S.r.l.	Italy/Italy	F2i SGR SpA	1.5b	Fits with investor's strategy to acquire renewable assets for long-term stable returns	Renewables: solar
27 September	DESFA SA (66% stake)	Greece/Italy	Snam SpA; Fluxys SA; Enagas S.A.	0.6b	Takes the company private; with the consortium planning to transfer technical and operations capabilities to drive synergies, as well as exploring expansion opportunities	Gas utility
31 July	Encevo S.A. (25.48% stake)	Luxembourg/China	China Southern Power Grid International (HK) Co., Ltd.	0.5b	Supports investor's strategy to expand geographical footprint	Generation
11 September	Valdesolar Hive SL	Spain/Spain	Repsol S.A.	0.2b	Supports investor's strategy of diversifying into renewable energy	Renewables: solar

With an eye on long-term stable returns, GIP has previously entered into similar agreements with Ørsted to acquire other under-construction offshore wind farms.

Note: All deals are announced deals, and the values indicated are disclosed enterprise values comprised of equity and debt components.

# Valuations snapshot – Q3 2018

1

The EY Europe Utilities Index outperformed the regional benchmark – STOXX Europe 600 – with a quarter-to-date return of 3.1% and a year-to-date return of 8.9%. Europe was the only region where utilities outperformed the regional benchmark index.

2

Large market capitalization integrated, generation and renewables assets drove superior returns.

3

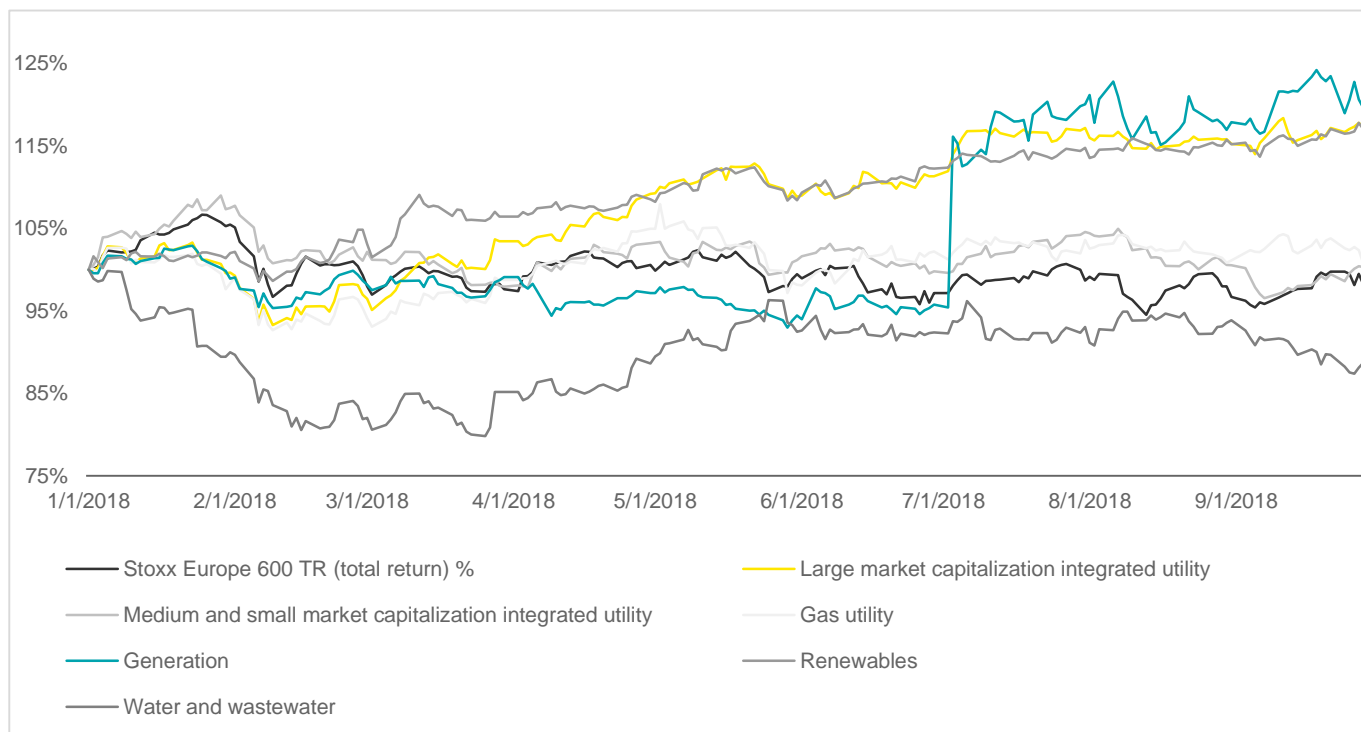
The sector's EV/FY2 EBTIDA multiple of 7.0x was higher than in Q2 (6.7x), indicating positive sentiment.

4

The TSR of generation assets jumped in Q3, driven by an increase in returns from Donbasenergo PJSC, after the announcement that private equity investor Maksym Yefimov had acquired a minority stake for an undisclosed value.

## Return over time – from base date

Chart 8: Total shareholder return by segment (1 January 2018–30 September 2018)



Note: EY analysis is based on data sourced from S&P Capital IQ. Please see the appendix for the detailed definitions, the company segment definitions and the company tagging for the valuations analysis.

# Valuations and TSR snapshot – Q3 2018

	Europe TSR		Europe valuations
	Quarter-to-date TSR	Year-to-date TSR	EV/FY2 EBITDA
	TSR in % (from 1 July 2018 to 30 September 2018)	TSR in % (from 1 January 2018 to 30 September 2018)	At 30 September 2018
Large market capitalization integrated	4.2%	17.2%	7.3x
Medium and small market capitalization integrated	-0.8%	0.3%	4.2x
Gas utility	-1.8%	0.7%	8.9x
Generation	20.7%	19.6%	5.6x
Renewables	4.4%	19.8%	9.6x
Water and wastewater	-3.5%	-11.3%	8.1x
EY Europe Utilities Index	3.1%	8.9%	7.0x

## TSR performance

- ▶ The generation segment was the highest performing segment in the region.
- ▶ Water and wastewater assets performed the worst in the region.
- ▶ Large market capitalization integrated assets performed better than in other regions.

## Valuations performance

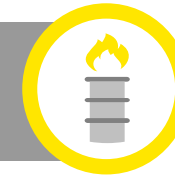
- ▶ The European utilities sector traded at the lowest multiple during Q3. This, coupled with high TSR values, indicates an opportune time to buy quality assets in this market.
- ▶ Renewables traded the highest of all asset classes in Europe and recorded the highest performance for renewables across all regions.

Good	TSR >20% higher than the regional sector average; EV/FY2 EBITDA > 20% discount (undervalued) compared with the regional sector average
Moderate	TSR 0% to 20% higher than the regional sector average; EV/FY2 EBITDA between a 0% to 20% discount (undervalued) compared with the regional sector average
Poor	TSR 0% to 20% lower than the regional sector average; EV/FY2 EBITDA between a 0% to 20% premium (overvalued) compared with the regional sector average
Very poor	TSR performance > 20% lower than the regional sector average; EV/FY2 EBITDA > 20% premium (overvalued) compared with the regional sector average

Note: EY analysis is based on data sourced from S&P Capital IQ. Please see the appendix for the detailed definitions, the company segment definitions and the company tagging for the valuations analysis.



# Performance snapshot – Q3 2018



## Large integrated utility

- ▶ The large market capitalization integrated segment returned a quarterly TSR of 4.17% and a year-to-date TSR of 17.19%.
- ▶ The quarterly TSR was above the regional index average of 3.06% for the quarter and above the two-year forward EV/EBITDA multiple for large market capitalization integrated traded at 7.3x at Q3, which is a premium of 4.95% to the average regional sector multiple, indicating potential overvaluation of this segment compared with others.

## Medium and small integrated utility

- ▶ The medium and small market capitalization integrated segment returned a quarterly TSR of -0.76% and a year-to-date TSR of 0.32%.
- ▶ The quarterly TSR was below the regional index average of 3.06% for the quarter and below the regional YTD average of 8.91%.
- ▶ The two-year forward EV/EBITDA multiple for medium and small market capitalization integrated traded at 4.2x at Q3, which is a discount of -39.72% to the average regional sector multiple, indicating potential undervaluation of this segment compared with others.

## Generation

- ▶ The generation segment returned a quarterly TSR of 20.68% and a year-to-date TSR of 19.58%.
- ▶ The quarterly TSR was above the regional index average of 3.06% for the quarter and above the regional YTD average of 8.91%.
- ▶ The two-year forward EV/EBITDA multiple for generation traded at 5.6x at Q3, which is a discount of -19.99% to the average regional sector multiple, indicating potential undervaluation of this segment compared with others.

- ▶ The gas utility segment returned a quarterly TSR of -1.79% and a year-to-date TSR of 0.65%.
- ▶ The quarterly TSR was below the regional index average of 3.06% for the quarter and below the regional YTD average of 8.91%.
- ▶ The two-year forward EV/EBITDA multiple for gas utility traded at 8.9x at Q3, which is a premium of 27.24% to the average regional sector multiple, indicating potential overvaluation of this segment compared with others.

- ▶ The renewables segment returned a quarterly TSR of 4.43% and a year-to-date TSR of 19.83%.
- ▶ The quarterly TSR was above the regional index average of 3.06% for the quarter and above the regional YTD average of 8.91%.
- ▶ The two-year forward EV/EBITDA multiple for renewables traded at 9.6x at Q3, which is a premium of 37.10% to the average regional sector multiple, indicating potential overvaluation of this segment compared with others.

- ▶ The water and wastewater segment returned a quarterly TSR of -3.50% and a year-to-date TSR of -11.28%.
- ▶ The quarterly TSR was below the regional index average of 3.06% for the quarter and below the regional YTD average of 8.91%.
- ▶ The two-year forward EV/EBITDA multiple for water and wastewater traded at 8.1x at Q3, which is a premium of 16.35% to the average regional sector multiple, indicating potential overvaluation of this segment compared with others.

## Gas utility



## Renewables



## Water and wastewater



## M&A outlook and investment hotspots

**70 MW/60 MWh**

Renault's plan to use recycled EV batteries to build a stationary battery storage unit will be the largest of its kind in Europe.

**Accelerated investment in offshore wind:** Several major projects are planned:

- Swiss energy trading company Vitol and investment firm Low Carbon will establish the US\$230m VLC Renewables fund to invest in wind projects.
- German utility EnBW will build an 11 MW onshore wind farm in Sweden.
- Ukraine Power Resources and Yuzhne Energy plan to build wind power plants with an installed capacity of 120 MW and 72 MW in Odesa, Ukraine.

**More interest in battery storage:** UK-based Eelpower, which provides flexible energy services, plans to deploy 1 GW of storage by 2022. Renault plans to build an energy storage facility using old EV batteries.

**Eastern Europe focuses on renewables:** Bosnia's Serb Republic has launched a US\$89.3m tender to build a 65 MW solar farm. Canadian investment firm DAI Inc. is planning a 150 MW solar photovoltaic (PV) power plant near Rubizhne, Ukraine.

## EY Europe Transaction Advisory Services P&amp;U contacts

**Miles Huq**

EY Global P&U TAS Leader  
Baltimore, Maryland, US

+1 410 783 3735  
[miles.huq@ey.com](mailto:miles.huq@ey.com)

**Arnaud De Giovanni**

EY EMEA P&U TAS Leader  
Paris, France

+33 1 55 61 04 18  
[arnaud.de.giovanni@fr.ey.com](mailto:arnaud.de.giovanni@fr.ey.com)

**John Curtin**

EY UK & Ireland P&U TAS Leader  
London, UK

+44 20 7951 6257  
[john.curtin@uk.ey.com](mailto:john.curtin@uk.ey.com)

**Grigory Arutunyan**

Central, Eastern and Southeastern Europe  
and Central Asia Region  
P&U TAS Leader – Moscow, Russia

+7 495 641 2941  
[grigory.s.arutunyan@ru.ey.com](mailto:grigory.s.arutunyan@ru.ey.com)

**Umberto Nobile**

Mediterranean P&U TAS Leader  
Milan, Italy

+39 02 8066 93744  
[umberto.nobile@it.ey.com](mailto:umberto.nobile@it.ey.com)

**Andreas Siebel**

EY Germany, Switzerland and Austria  
P&U TAS Leader  
Düsseldorf, Germany

+49 211 9352 18523  
[andreas.siebel@de.ey.com](mailto:andreas.siebel@de.ey.com)

**Bruno Swildens**

Western Europe and Maghreb  
P&U TAS Leader  
Rotterdam, Netherlands

+31 88 40 78776  
[bruno.jelgerhuis.swildens@nl.ey.com](mailto:bruno.jelgerhuis.swildens@nl.ey.com)

**Michael Bruhn**

EY Nordics P&U TAS Leader  
Copenhagen, Denmark

+45 2529 3135  
[michael.bruhn@dk.ey.com](mailto:michael.bruhn@dk.ey.com)



# Asia-Pacific

Huge Australian gas deal boosts investment



# Power transactions and trends Q3 2018

## Asia-Pacific

“If completed, the CKI purchase of APA Group will be a game changer for Australia’s gas segment but Federal Government approvals are looking unlikely.”

**Miles Huq,**  
EY Global P&U TAS Leader

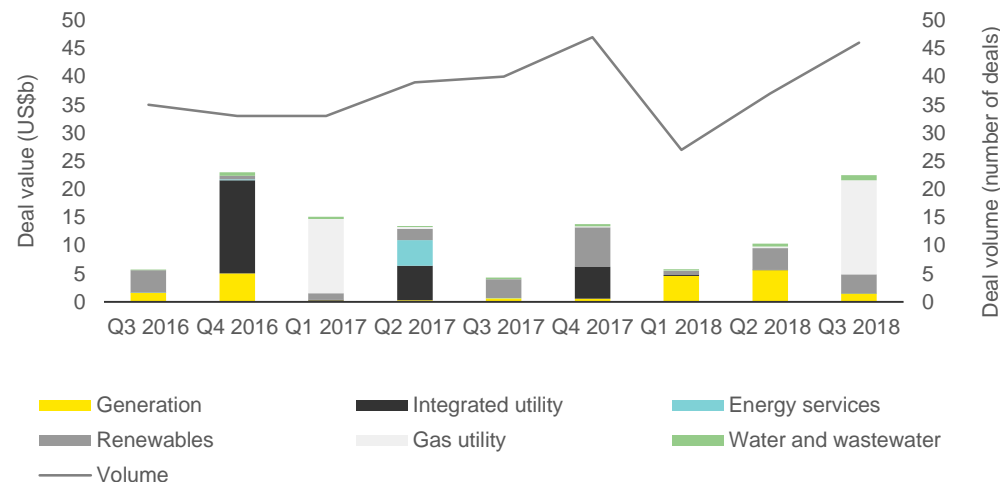
# US\$22.5b

deal value, 118% increase from Q2

# 74%

of total deal value contributed by gas assets (US\$16.7b)

Chart 9: Asia-Pacific deal value and volume by segment (announced asset and corporate-level deals, Q3 2016–Q3 2018)



### Transaction highlights

- ▶ **Largest deal in gas utility assets:** In a US\$16.3b deal, a consortium consisting of CK Infrastructure (CKI), CK Asset (CKA) and Power Assets Holdings announced plans to acquire Australian gas utility APA Group.
- ▶ **Investors pursue generation assets in developing countries:** The region hosted eight deals totaling US\$1.5b in generation assets, with much of this (US\$1.1b) attributable to corporate investors targeting assets in China, South Korea and India. In India in September, the state of Punjab announced plans to set up a 4 GW thermal power plant.

## Investors seek attractive returns in face of complex deal environment

### Hong Kong's investment in Australian assets drives deal value

- ▶ Despite Australia's ongoing political opposition of foreign ownership of critical energy assets, this quarter saw CKI announce plans to acquire APA Group for US\$16.3b. If the acquisition completes, CKI will control 68% of the gas transmission and distribution pipelines in Victoria, 86% in South Australia and 72% in Queensland. But, despite approval from the Australian Competition and Consumer Commission, the Federal Government has announced a preliminary view the bid should be turned down with a formal decision due shortly.

### Thriving EV market in China

- ▶ Roughly half of all the world's EVs are sold in China, and this growing demand is driving investment from overseas companies.
- ▶ In August, South Korea's SK Innovation announced it will build a US\$354m battery separator plant in southeast China to capitalize on fast-growing demand for EVs.
- ▶ French automaker Renault announced that China will be the first market to receive its new, Indian-built affordable EV. Renault forecasts it will sell 550,000 of these EVs to Chinese buyers by 2022.

“We are business people, we look at the numbers. There are 27 million cars sold in China and 4 million in India. I go where the market is, and China is the most promising market right now for EVs – it's the largest market”

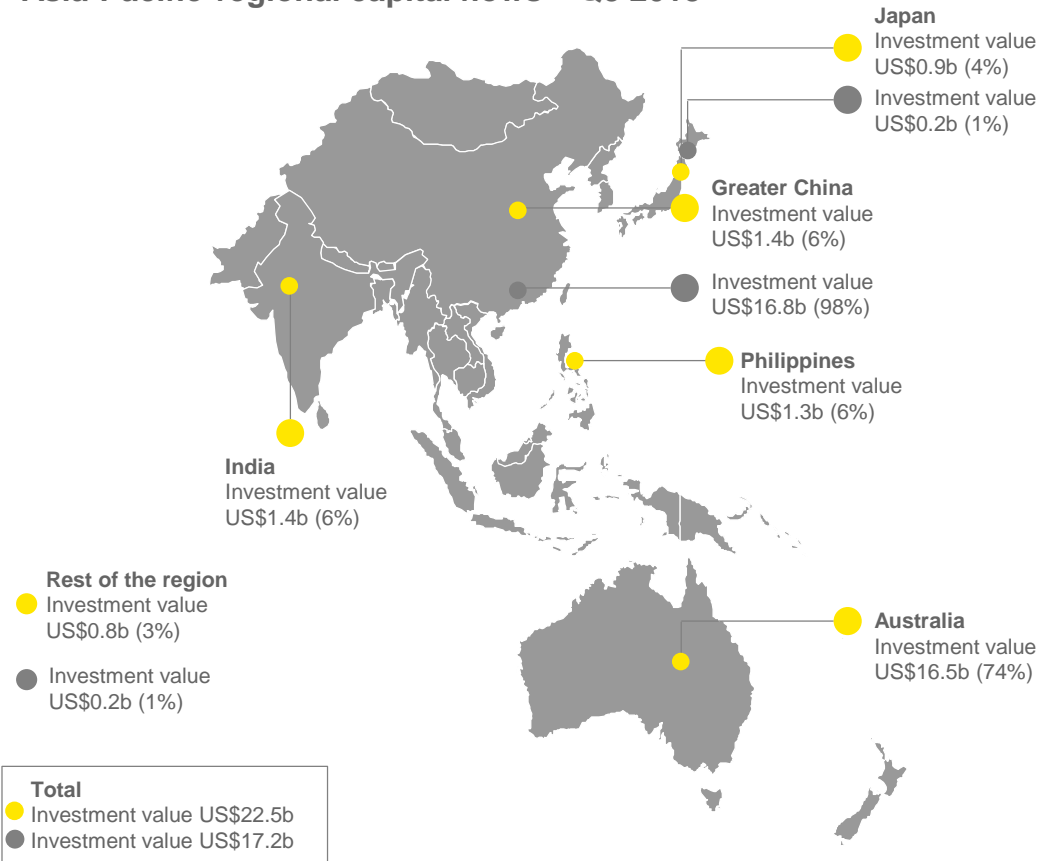
**Carlos Ghosn,**

Global Chairman of the Renault-Nissan-Mitsubishi Alliance<sup>6</sup>

<sup>6</sup><https://economictimes.indiatimes.com/industry/auto/cars-uvs/renaults-electric-car-designed-in-india-to-be-launched-in-china-first/articleshow/66050658.cms>

# China remains top outbound investor

## Asia-Pacific regional capital flows – Q3 2018\*



\*Note: Percentages may not add to 100% due to rounding.

● Top investment destinations ● Top outbound investing countries

Greater China is the region's top investor, with 20 domestic deals totaling **US\$1.4b** and three cross-border deals totaling **US\$16.7b**.

India remains a top investment destination, attracting **US\$1.4b**.

“International private equity firms are increasing their presence in India, filling a gap as domestic access to capital is constrained.”

**Miles Huq,**  
EY Global P&U TAS Leader

## Top five Asia-Pacific deals – Q3 2018

Announcement date	Target	Target country/bidder region	Bidder	Deal value (US\$)	Bidder rationale	Segment
13 August	APA Group Ltd*	Australia/Hong Kong (Greater China)	CK Infrastructure (CKI), CK Asset (CKA) and Power Assets Holdings	16.3b	Establishes CKI as a major player in Australia's east coast gas pipeline network, where it already owns stakes in gas infrastructure and energy assets	Gas utility
20 September	Energy Development Corporation (EDC) (10.89% stake)	Philippines/Philippines	EDC	1.3b	In line with EDC's plan to delist, giving the organization greater corporate flexibility and allowing it to offer shareholders a premium to the current share price	Renewables: geothermal
6 July	X-ELIO Energy, S.L. (187 MW Japanese solar assets portfolio)	Japan/Japan	Consortium formed by Japanese institutional investors	0.6b	Aligns with investor's goal of investing in growth assets with long-term returns	Renewables: solar
12 August	Ramky Enviro Engineers Limited (60% stake)	India/US	Kohlberg Kravis Roberts & Co. L.P.	0.5b	Brings operational advantages by leveraging the bidder's engineering innovation, through attracting managerial talent and boosting efficiencies	Water and wastewater: treatment
26 July	Monnet Ispat & Energy Ltd. (74.29% stake)	India/India	JSW Steel Ltd.; AION Capital Partners Limited	0.4b	Aligns with JSW's focus on acquiring smaller steel plants with captive generation in the domestic market	Generation

While the deal hangs in the balance, the proposed acquisition of gas utility APA Group represented a 33% premium over the closing price a day prior to the announcement.

All deals are announced deals, and the values indicated are disclosed enterprise values comprised of equity and debt components.

\*Note: The completion of this deal remains in balance as the Federal Government issued a preliminary view that the bid should be rejected.

# Valuations snapshot – Q3 2018

1

In Asia-Pacific, the utilities segment significantly underperformed the broader market. The EY Asia-Pacific Utilities Index recorded a TSR of -1.1% for the quarter, with a year-to-date return of -1.8%. These returns are very low compared with the Nikkei 225 benchmark, which returned 10.4% and 4.2%, respectively.

2

Gas is the highest performing segment in the region and the only segment consistently outperforming the market with a year-to-date return of 20.2%.

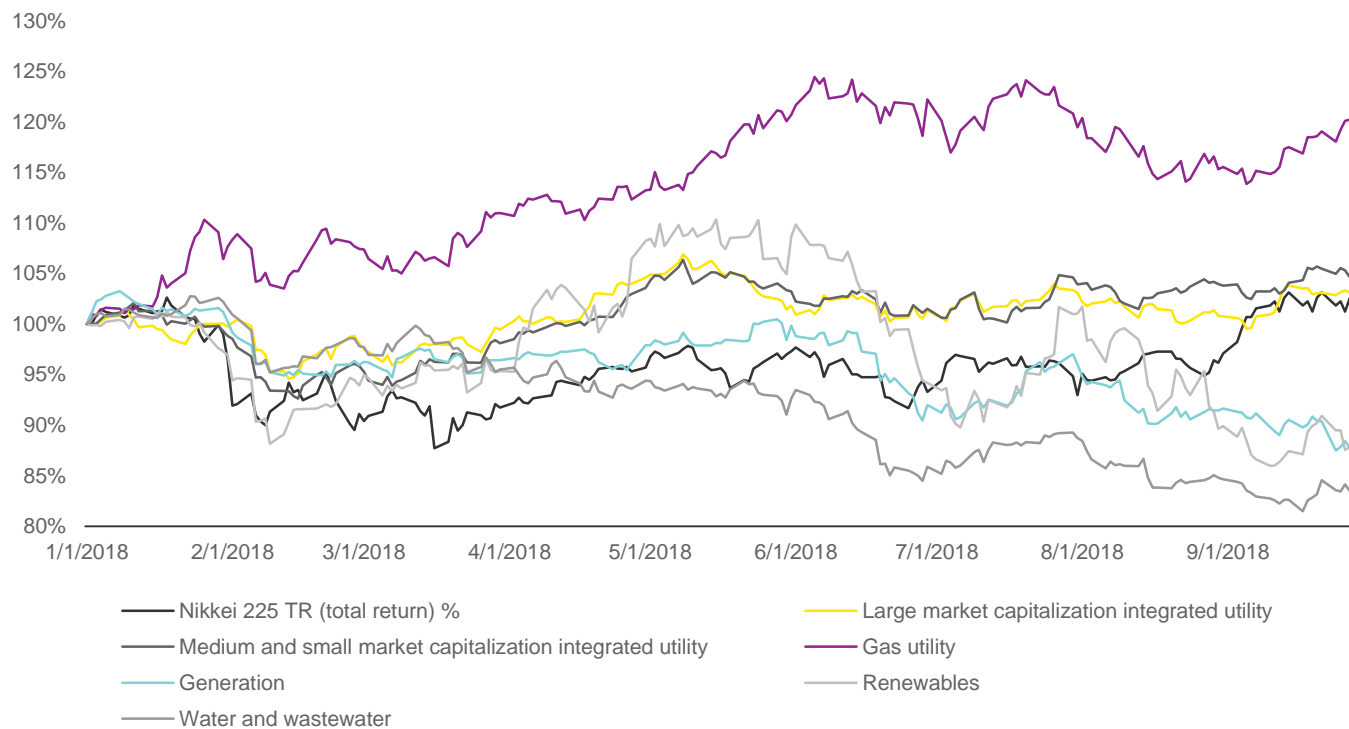
3

The EV/FY2 EBITDA of the sector was 11.1x, when compared with 10.6x in Q2, signaling upbeat market sentiments.

4

Renewables gave negative quarter-to-date and year-to-date returns, making Asia-Pacific the only region where renewables consistently underperformed.

**Chart 10: Total shareholder return by segment (1 January 2018–30 September 2018)**



Note: EY analysis is based on data sourced from S&P Capital IQ. Please see the appendix for the detailed definitions, the company segment definitions and the company tagging for the valuations analysis.

## Valuations and TSR snapshot – Q3 2018

	Asia-Pacific TSR		Asia-Pacific valuations
	Quarter-to-date TSR	Year-to-date TSR	EV/FY2 EBITDA
	TSR in % (from 1 July 2018 to 30 September 2018)	TSR in % (from 1 January 2018 to 30 September 2018)	At 30 September 2018
Large market capitalization integrated	1.6%	3.2%	22.3x
Medium and small market capitalization integrated	3.2%	5.2%	10.54x
Gas utility	-0.3%	20.2%	12.8x
Generation	-4.7%	-11.9%	7.7x
Renewables	-6.7%	-12.0%	8.5x
Water and wastewater	-3.7%	-16.3%	7.9x
EY Asia-Pacific Utilities Index	-1.1%	-1.78%	11.1x

### TSR performance

- ▶ Gas utility was the highest performing segment in the region and the only segment consistently outperforming the market.
- ▶ Renewables performed the worst, with the worst returns across all regions.
- ▶ Medium and small market capitalization integrated assets outperformed other regions.

### Valuations performance

- ▶ The Asia-Pacific utilities sector traded highest across all geographies and slightly higher than in Q2.
- ▶ Large market capitalization integrated assets traded at the highest value in the region and higher than the forward multiple of this asset across all other geographies.

Good	TSR >20% higher than the regional sector average; EV/FY2 EBITDA > 20% discount (undervalued) compared with the regional sector average
Moderate	TSR 0% to 20% higher than the regional sector average; EV/FY2 EBITDA between a 0% to 20% discount (undervalued) compared with the regional sector average
Poor	TSR 0% to 20% lower than the regional sector average; EV/FY2 EBITDA between a 0% to 20% premium (overvalued) compared with the regional sector average
Very poor	TSR performance > 20% lower than the regional sector average; EV/FY2 EBITDA > 20% premium (overvalued) compared with the regional sector average

Note: EY analysis is based on data sourced from S&P Capital IQ. Please see the appendix for the detailed definitions, the company segment definitions and the company tagging for the valuations analysis.

# Performance snapshot – Q3 2018



## Large integrated utility

- ▶ The large market capitalization integrated segment returned a quarterly TSR of 1.58% and a year-to-date TSR of 3.18%.
- ▶ The quarterly TSR was above the regional index average of -1.07% for the quarter and above the regional YTD average of -1.78%.
- ▶ The two-year forward EV/EBITDA multiple for large market capitalization integrated traded at 22.3x at Q3, which is a premium of 101.15% to the average regional sector multiple, indicating potential overvaluation of this segment compared with others.

- ▶ The gas utility segment returned a quarterly TSR of -0.31% and a year-to-date TSR of 20.18%.
- ▶ The quarterly TSR was above the regional index average of -1.07% for the quarter and above the regional YTD average of -1.78%.
- ▶ The two-year forward EV/EBITDA multiple for gas utility traded at 12.8x at Q3, which is a premium of 15.40% to the average regional sector multiple, indicating potential overvaluation of this segment compared with others.

## Gas utility



## Medium and small integrated utility

- ▶ The medium and small market capitalization integrated segment returned a quarterly TSR of 3.21% and a year-to-date TSR of 5.18%.
- ▶ The quarterly TSR was above the regional index average of -1.07% for the quarter and above the regional YTD average of -1.78%.
- ▶ The two-year forward EV/EBITDA multiple for medium and small market capitalization integrated traded at 10.5x at Q3, which is a discount of -5.12% to the average regional sector multiple, indicating potential undervaluation of this segment compared with others.

- ▶ The renewables segment returned a quarterly TSR of -6.65% and a year-to-date TSR of -11.97%.
- ▶ The quarterly TSR was below the regional index average of -1.07% for the quarter and below the regional YTD average of -1.78%.
- ▶ The two-year forward EV/EBITDA multiple for renewables traded at 8.5x at Q3, which is a discount of -23.22% to the average regional sector multiple, indicating potential undervaluation of this segment compared with others.

## Renewables

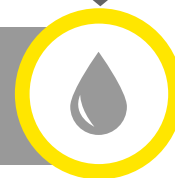


## Generation

- ▶ The generation segment returned a quarterly TSR of -4.74% and a year-to-date TSR of -11.85%.
- ▶ The quarterly TSR was below the regional index average of -1.07% for the quarter and below the regional YTD average of -1.78%.
- ▶ The two-year forward EV/EBITDA multiple for generation traded at 7.7x at Q3, which is a discount of -30.21% to the average regional sector multiple, indicating potential undervaluation of this segment compared with others.

- ▶ The water and wastewater segment returned a quarterly TSR of -3.74% and a year-to-date TSR of -16.31%.
- ▶ The quarterly TSR was below the regional index average of -1.07% for the quarter and below the regional YTD average of -1.78%.
- ▶ The two-year forward EV/EBITDA multiple for water and wastewater traded at 7.9x at Q3, which is a discount of -28.30% to the average regional sector multiple, indicating potential undervaluation of this segment compared with others.

## Water and wastewater



## M&A outlook and investment hotspots

# 35 MWh

storage facility connected to a 19 MW solar PV plant to be built in South Korea by Macquarie Capital Korea

“Renewables and new energy technologies will dominate investor interest in Asia-Pacific.”

**Miles Huq,**  
EY Global P&U TAS Leader

**India to remain wind energy investment hotspot:** Notable projects include:

- Solar Energy Corporation of India has announced plans to construct 300 MW of wind capacity by Q3 2021.
- French firm Engie and equity investor STOA have established a joint venture to install more than 2 GW of wind power capacity in India in the next five years.

**Governments stay focused on energy storage:** In Australia, the South Australian State Government has committed US\$100m over four years to award grants of US\$2,500 to help households install batteries. In India, state-owned Odisha Hydro Power Corp. will build a US\$405m 600 MW hydro pump storage facility for utility scale projects.

**Strong investment in solar:** In the Indian state of Gujarat, state-owned utility Gujarat Urja Vikas Nigam has launched a tender for 700 MW of grid-connected solar PV projects to be installed under the third phase of the Raghnesda solar complex. In Vietnam, Japanese energy firm Sharp Energy Solutions Corporation will build two solar power plants, each with a direct current capacity of 49 MW.



## EY Asia-Pacific P&amp;U Transaction Advisory Services contacts

**Miles Huq**

EY Global P&U TAS Leader  
Baltimore, Maryland, US

+1 410 783 3735  
[miles.huq@ey.com](mailto:miles.huq@ey.com)

**Nick Cardno**

EY Oceania P&U TAS Leader  
Sydney, Australia

+61 2 9248 4817  
[nick.cardno@au.ey.com](mailto:nick.cardno@au.ey.com)

**Gilles Pascual**

EY ASEAN P&U TAS Leader  
Singapore

+65 6309 6208  
[gilles.pascual@sg.ey.com](mailto:gilles.pascual@sg.ey.com)

**Alex Zhu**

EY Greater China P&U TAS Leader  
Beijing, China

+86 10 5815 3891  
[alex.zhu@cn.ey.com](mailto:alex.zhu@cn.ey.com)

**Somesh Kumar**

India P&U TAS Leader  
New Delhi, India

+91 11 6671 8270  
[somesh.kumar@in.ey.com](mailto:somesh.kumar@in.ey.com)

**Yo Takehana**

EY Japan P&U TAS Leader  
Tokyo, Japan

+81 3 4582 6623  
[yo.takehana@jp.ey.com](mailto:yo.takehana@jp.ey.com)

**Bum Choong Kim**

Korea P&U TAS Leader  
Seoul, Korea

+82 2 3787 4107  
[bum-choong.kim@kr.ey.com](mailto:bum-choong.kim@kr.ey.com)



# Africa and the Middle East

## Focus on renewable energy drives investment

# Power transactions and trends Q3 2018

## Africa and the Middle East

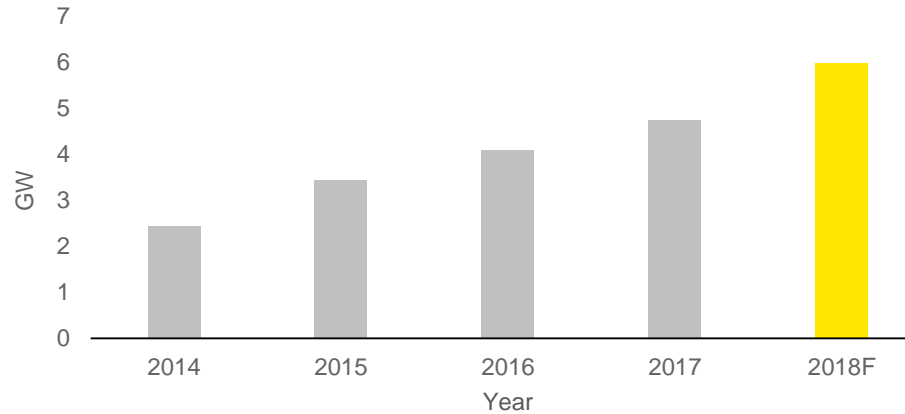
**US\$131b**

investment required in the Gulf Cooperation Council (GCC) energy sector to 2023

**30 GW**

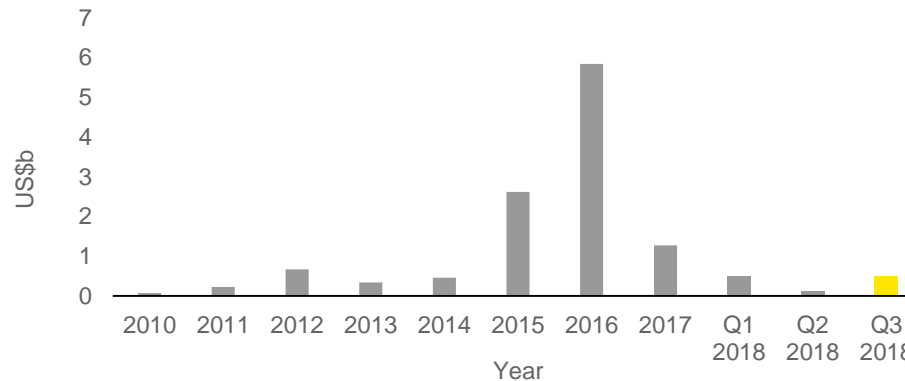
expected growth in Africa's wind capacity by 2027

Chart 11: Africa and the Middle East wind installed capacity



Source: Bloomberg New Energy Finance

Chart 12: Africa and the Middle East deal value (announced asset and corporate-level deals, 2010–Q3 2018)



Source: EY analysis based on publicly disclosed data

### Transaction highlights

- **Wind investment gains momentum:** The Saudi Government's first wind tender for 400 MW (worth US\$500m), backed by a 20-year power purchase agreement (PPA), received four bids and will be awarded in December. The International Finance Corporation (IFC) is partnering with Moroccan renewables developer Gaia Energy to build 22 wind and other renewable energy projects in nine African countries.
- **Boosted brownfield investments:** In the largest M&A transaction of the region this quarter, Noble Energy, Inc., Delek Drilling and East Gas Company agreed to acquire a 39% stake in Egypt's East Mediterranean Gas S.A.E. for US\$518m. In Saudi Arabia in July, Public Investment Fund acquired a 15.2% stake in ACWA Power International, which is engaged in power generation and desalinated water production, for an undisclosed consideration.

# African governments focus on renewable energy to increase electrification

“For Africa to achieve more reliable, accessible and efficient power systems, smart grids must be established ... to solve many of the continent’s long-standing power connection challenges.”

**Richard Schomberg,**

Vice President of Smart Energy Standardization at  
Electricite de France Group, speaking at  
3rd Africa Smart Grid Forum<sup>7</sup>

## Governments seek foreign investments

- ▶ The Togo Government has announced that it aims to achieve 100% electrification by 2030, with half of the forecast total funding of US\$1.7b expected from private investors.
- ▶ In September, Nigeria and the African Development Bank launched a feasibility study to establish a 1 GW solar independent power producer (IPP) rural electrification program.
- ▶ The World Bank has provided debt funding of US\$794.5m for Cameroon’s Nachtigal Hydropower Project.

## African countries postpone nuclear projects

- ▶ Kenya has postponed plans to build a US\$9.6b nuclear plant to focus on developing renewable energy and coal projects.
- ▶ South Africa canceled plans to add 9.6 GW of nuclear power by 2030 and will instead add natural gas, wind and other renewables.

<sup>7</sup>[http://www.xinhuanet.com/english/2018-10/03/c\\_137509892.htm](http://www.xinhuanet.com/english/2018-10/03/c_137509892.htm)

## Middle East progresses its energy transition

“DEWA will disrupt the entire business of public utilities by becoming the world’s first digital utility to use autonomous systems for renewable energy and storage.”

Al Tayer,

MD and CEO of Dubai Electricity and Water Authority (DEWA)<sup>8</sup>

Kuwait National Petroleum Company has tendered a **1.5 GW** solar power plant, with construction to commence in 2019

### Investment in new technology on the rise

- ▶ In September, DEWA formed a strategic partnership with the University of Berkley to research artificial intelligence applications. That same month, DEWA’s smart app store began offering customers discounts on the purchase of EVs.

### Trouble for world’s largest solar farm?

- ▶ The US\$200b 200 GW solar plant being jointly built by SoftBank and Saudi Public Investment Firm has reportedly been shelved due to technical challenges of integrating it with the region’s grid. (Both firms and the Government deny this.)

<sup>8</sup><https://www.dewa.gov.ae/en/about-dewa/news-and-media/press-and-news/latest-news/2018/09/dewa-organises-3-day-ai-leadership-programme-in-cooperation>

## Top five Africa and the Middle East greenfield investments – Q3 2018

Bidder company/country	Target country	Project description	Segment
<b>Voltaia/France</b>	Egypt	Plans to invest US\$800m over the next five years to build 300 MW of solar and 500 MW of wind capacity	Renewables: solar and wind
<b>CDC Group/UK Globeleq/Africa</b>	Kenya (Malindi Solar Group)	Announced a US\$66m debt investment in Malindi Solar Group to build a 52 MWp solar plant connected to the Kenyan grid	Renewables: solar
<b>Deutsche Investitions- und Entwicklungsgesellschaft mbH/Germany</b>	West Africa (Daystar Power)	Undisclosed funding provided to Daystar Power to roll out hybrid solar solutions in West Africa	Renewables: solar
<b>Canadian Solar/China ET Energy/China</b>	South Africa	Engaged to provide EPC services on the construction of two solar plants procured under South Africa's Renewable Energy Independent Power Producers Program (REIPPP)	Renewables: solar
<b>Shenzhen Kangmingsheng Technology Industry/China</b>	Nigeria	Announced plans to build a solar manufacturing plant	Renewables: solar manufacturing

All major greenfield investments in Q3 were in renewables projects.

## M&amp;A outlook and investment hotspots

# 150 MW

solar tender launched by  
state-owned Tanzania Electric  
Supply Company Ltd.  
(Tanesco)

**More private sector investments in Africa:** Notable initiatives include a US\$1m grant from the Sustainable Energy Fund for Africa to Angolan IPPs to encourage private investment in renewable energy. Also, the African Development Bank has arranged a US\$58m loan scheme to support its Off-Grid Energy Access Fund, together with several Western development finance institutions.

**Gulf utilities focus on water and wastewater investment:** Saudi Arabia will invest US\$10b in desalinated water projects and US\$1b in sewage water treatment plants. Meanwhile, Oman Oil Company has signed a US\$483m agreement with Thailand's Gulf Energy Development to develop the Duqm independent power and water project with an installed power generation capacity of 326 MW and an installed water generation capacity of 1,667 cubic meters per hour.

**Solar energy remains an investment priority:** Major upcoming projects include:

- Almaden Emirates Fortune Power LLC, a joint venture between Emirates Fortune Group and China's Changzhou Almaden, will build a 200 -400 MW solar plant in Chad.
- Italy's Denikon and China's Sinosteel Corporation signed a memorandum of understanding to develop a 1 GW solar farm and manufacturing facility in Iran.
- The Tunisian Government will develop a 1.7 GW solar complex by 2020.
- The Ugandan Government signed a US\$70m agreement with XSABO Group to construct a 20 MW pilot solar farm.
- Zambia's Government launched a request for proposal to deploy 100 MW of solar power.

## EY Africa and the Middle East P&U Transaction Advisory Services contacts

### Miles Huq

EY Global P&U TAS Leader  
Baltimore, Maryland, US

+1 410 783 3735  
[miles.huq@ey.com](mailto:miles.huq@ey.com)

### Bruce Harvey

EY Africa P&U TAS Leader  
Johannesburg, South Africa

+27 11 772 5352  
[bruce.harvey@za.ey.com](mailto:bruce.harvey@za.ey.com)

### David Lloyd

Middle East P&U TAS Leader  
Riyadh, Saudi Arabia

+966 11 215 9852  
[david.lloyd@sa.ey.com](mailto:david.lloyd@sa.ey.com)



An aerial photograph of a coastline at sunset. The sky is filled with soft, horizontal bands of orange, yellow, and purple. The water of the bay is calm, reflecting the colors of the sky. A dark, forested peninsula is visible on the left side of the frame. The overall mood is serene and natural.

# Appendix

Capital flows, detailed definitions and company inclusions for analysis

## Global capital flows – Q3 2018

## Total investment activity globally by geography – Q3 (US\$b)

		Investing geography											
Receiving geography		US	Australia	UK	Italy	Greater China	India	Philippines	Japan	Greece	Canada	Rest of the world	Total receipts
	US		7.1	0	0	0	0	0	0	0.2	0	18.9	1.3
Australia		0	0	0	0	16.3	0	0	0	0	0	0.2	16.5
UK		5.9	0	0.2	0	0	0	0	0	0	0	0	6.1
Italy		0	0	0	1.6	0	0	0	0	0	0	0	1.6
Greater China		0	0	0	0	1.4	0	0	0	0	0	0	1.4
India		0.6	0	0	0	0	0.5	0	0	0	0.4	0	1.4
Philippines		0	0	0	0	0	0	1.3	0	0	0	0	1.3
Japan		0	0	0	0	0	0	0	0.9	0	0	0	0.9
Greece		0	0	0	0.6	0	0	0	0	0.2	0	0	0.8
Canada		0	0	0	0	0	0	0	0	0	0.7	0	0.7
Rest of the world		0	0	0.3	0	0.5	0	0	0	0	0.1	2.8	3.7
<b>Total investment</b>		<b>13.5</b>	<b>0</b>	<b>0.5</b>	<b>2.2</b>	<b>18.2</b>	<b>0.5</b>	<b>1.3</b>	<b>1.1</b>	<b>0.2</b>	<b>20.1</b>	<b>4.3</b>	<b>61.9</b>

## Global capital flows – Q3 2018

Total investment activity globally by geography – YTD (US\$b)

		Investing geography										
		US	Germany	Portugal	Spain	Australia	Greater China	Canada	UK	Switzerland	Rest of world	Total receipts
Receiving geography	US	47.5	0	0	0	0.3	0	20.2	0	1.7	3.3	<b>73</b>
	Germany	0	46.6	0	0	0	0	0	0	5.4	1.2	<b>53.2</b>
	Portugal	0	0	0.1	0	0	27.4	0	0	0	0	<b>27.5</b>
	Spain	4.4	0	0	1.2	1.3	3.8	0	4.7	0	0.2	<b>15.6</b>
	Australia	0	0	0	0	0.2	16.3	0	0	0.1	0.3	<b>16.9</b>
	Greater China	0	0	0	0	0	7.4	0	0	0	0	<b>7.4</b>
	Canada	0	0	0	0	0	0	4.2	0	0	0	<b>4.3</b>
	UK	5.9	0	0	0	0	0	0.3	2.1	0	1.1	<b>9.4</b>
	Switzerland	0	0	0	0	0	0	0	0	0	0.9	<b>0.9</b>
	Rest of world	1.3	0.1	0	0.1	0	1.3	1.8	0.9	0	28.2	<b>33.7</b>
Total investment	<b>59.1</b>	<b>46.7</b>	<b>0.1</b>	<b>1.3</b>	<b>1.8</b>	<b>56.2</b>	<b>26.5</b>	<b>7.7</b>	<b>7.2</b>	<b>35.2</b>	<b>241.8</b>	

## TSR and valuation analysis definitions

---

<b>TSR/valuation identifier</b>	<b>EY definition</b>
Q3 QTD TSR	Quarter-to-date TSR (%) from 1 July 2018 to 30 September 2018
Q3 YTD TSR	Year-to-date TSR (%) from 1 January 2018 to 30 September 2018
TR	Year-to-date total return of an index from 1 January 2018 to 30 September 2018
Q3 EV/FY2 EBITDA	The market capitalization weighted average of the current enterprise value (EV) (at 30 September 2018)/two-year forward (at 30 September 2018) adjusted earnings before interest, tax, depreciation and amortization (EBITDA)

## Company segment definitions

Segment	EY definition
<b>Generation</b>	Utilities that generate the majority of their revenues from power production through large centralized (nonrenewable) sources, including coal, gas, oil, large hydro and nuclear
<b>Gas utilities</b>	Utilities that generate the majority of their revenues from downstream gas, including transmission, distribution and the sale of gas as an energy source
<b>Renewables</b>	Utilities that are engaged in generating power from centralized or distributed renewable energy sources, including solar, wind and small hydro
<b>Large market capitalization</b>	Utilities with a market capitalization of more than US\$10b and engaged in the transport or delivery of electricity (networks and retail). This category also includes utilities that are vertically integrated or horizontally integrated and engaged in multiple segments of the power value chain – including generation, transmission, distribution, retail and gas retail.
<b>Medium and small market capitalization</b>	Utilities with a market capitalization of less than US\$10b and engaged in the transport or delivery of electricity (networks and retail). This category also includes utilities that are vertically integrated or horizontally integrated and engaged in multiple segments of the power value chain – including generation, transmission, distribution, retail, and gas retail.
<b>Water and wastewater</b>	Utilities that manage water and wastewater networks and engage in the distribution, supply or treatment of water and wastewater

## Americas company segment tagging for valuations analysis

Segment	Company inclusions
Gas	Atmos Energy Corp.
	Chesapeake Utilities Corp.
	National Fuel Gas Company
	New Jersey Resources Corp.
	NiSource Inc.
	Northwest Natural Holding Company
	ONE Gas, Inc.
	RGC Resources, Inc.
	South Jersey Industries, Inc.
	Southwest Gas Holdings, Inc.
	Spire Inc.
	UGI Corp.
	AltaGas Ltd.
	TransCanada Corp.
	Valener Inc.
Large market capitalization integrated	Alliant Energy Corp.
	Ameren Corp.
	American Electric Power Company, Inc.
	Avangrid, Inc.
	CenterPoint Energy, Inc.
	CMS Energy Corp.
Consolidated Edison, Inc.	

Segment	Company inclusions
Large market capitalization integrated (continued)	Dominion Energy, Inc.
	DTE Energy Company
	Duke Energy Corp.
	Edison International
	Entergy Corp.
	Eversource Energy
	Exelon Corp.
	FirstEnergy Corp.
	Fortis Inc.
	NextEra Energy, Inc.
	PG&E Corp.
	PPL Corp.
	Public Service Enterprise Group Inc.
	Sempra Energy
	Southern Company
WEC Energy Group, Inc.	
Xcel Energy Inc.	
Medium and small market capitalization integrated	ALLETE, Inc.
	Avista Corp.
	Black Hills Corp.
	Companhia Energética de Brasília - CEB

## Americas company segment tagging for valuations analysis (continued)

Segment	Company inclusions
<b>Medium and small market capitalization integrated (continued)</b>	Crius Energy Trust
	EDP - Energias do Brasil S.A.
	El Paso Electric Company
	Genie Energy Ltd.
	Hawaiian Electric Industries, Inc.
	Just Energy Group Inc.
	Light S.A.
	MDU Resources Group, Inc.
	MGE Energy, Inc.
	NorthWestern Corp.
	OGE Energy Corp.
	Otter Tail Corp.
	Pinnacle West Capital Corp.
	PNM Resources, Inc.
	Portland General Electric Company
	SCANA Corp.
	Spark Energy, Inc.
	Unitil Corp.
	Vectren Corp.
	Algonquin Power & Utilities Corp.
ATCO Ltd.	
Canadian Utilities Ltd.	
Emera Inc.	
Hydro One Ltd.	

Segment	Company inclusions
<b>Renewables</b>	AES Tietê Energia S.A.
	Clearway Energy, Inc.
	CPFL Energias Renováveis S.A.
	NextEra Energy Partners, LP
	Northland Power Inc.
	Ormat Technologies, Inc.
	Pattern Energy Group Inc.
	SunPower Corp.
	Sunrun Inc.
	TerraForm Power, Inc.
	TransAlta Renewables Inc.
	Vivint Solar, Inc.
	Covanta Holding Corp.
	Boralex Inc.
	Brookfield Renewable Partners L.P.
<b>Generation</b>	Canadian Solar Inc.
	Innergex Renewable Energy Inc.
	CESP - Companhia Energética de São Paulo
	NRG Energy, Inc.
	The AES Corp.
	TransAlta Corp.
	Vistra Energy Corp.
Capital Power Corp.	

## Americas company segment tagging for valuations analysis (continued)

Segment	Company inclusions
Water and wastewater	American States Water Company
	American Water Works Company, Inc.
	Aqua America, Inc.
	Artesian Resources Corp.
	California Water Service Group
	Connecticut Water Service, Inc.
	Consolidated Water Co. Ltd.
	Middlesex Water Company
	SJW Group
	The York Water Company



## Europe company segment tagging for valuations analysis

Segment	Company inclusions
<b>Large market capitalization integrated</b>	Centrica plc
	CEZ, a. s.
	E.ON SE
	EDP - Energias de Portugal, S.A.
	Electricité de France S.A.
	Endesa, S.A.
	Enel SpA
	ENGIE SA
	Fortum Oyj
	Iberdrola, S.A.
	innogy SE
	National Grid plc
	Red Eléctrica Corporación, S.A.
	RWE Aktiengesellschaft
	SSE plc
Terna - Rete Elettrica Nazionale Società per Azioni	
VERBUND AG	
<b>Medium and small market capitalization integrated</b>	ACCIONA, S.A.
	Alpiq Holding AG
	Drax Group plc
	Elia System Operator SA

Segment	Company inclusions
<b>Medium and small market capitalization integrated (continued)</b>	EnBW Energie Baden-Württemberg AG
	Enea S.A.
	EVN AG
	PGE Polska Grupa Energetyczna S.A.
	Public Joint Stock Company Inter RAO UES
	Public Joint-Stock Company Moscow United Electric Grid Company
	Public Power Corp. S.A.
	Rosseti, Public Joint Stock Company
	TAURON Polska Energia S.A.
	<b>Gas utility</b>
Enagás, S.A.	
Hera S.p.A.	
Italgas S.p.A.	
Naturgy Energy Group, S.A.	
Rubis	
Snam S.p.A.	
A2A S.p.A.	
<b>Generation</b>	Irkutsk Public Joint Stock Company of Energetics and Electrification
	Public Joint Stock Company Donbasenergo
	Public Joint-Stock Company Federal Hydro-Generating Company - RusHydro
	Uniper SE

## Europe company segment tagging for valuations analysis (continued)

Segment	Company inclusions
<b>Renewables</b>	aventron AG
	EDP Renováveis, S.A.
	Energiekontor AG
	Falck Renewables S.p.A.
	FUTUREN SA
	Ørsted A/S
	Terna Energy Societe Anonyme Commercial Technical Company S.A.
<b>Water and wastewater</b>	Pennon Group Plc
	Severn Trent Plc
	SUEZ SA
	United Utilities Group PLC
	Veolia Environnement S.A.

## Asia-Pacific company segment tagging for valuations analysis

Segment	Company inclusions
<b>Large market capitalization integrated</b>	Chubu Electric Power Company, Inc.
	CK Infrastructure Holdings Ltd.
	CLP Holdings Ltd.
	Korea Electric Power Corp.
	Origin Energy Ltd.
	Power Assets Holdings Ltd.
	Power Grid Corp. of India Ltd.
	Tenaga Nasional Berhad
	The Kansai Electric Power Company, Inc.
<b>Medium and small market capitalization integrated</b>	AGL Energy Ltd.
	AusNet Services Ltd.
	BKW AG
	CESC Ltd.
	Contact Energy Ltd.
	Electric Power Development Co., Ltd.
	ERM Power Ltd.
	Genesis Energy Ltd.
	HK Electric Investments and HK Electric Investments Ltd.
	Hokkaido Electric Power Company, Inc.
	Hokuriku Electric Power Company

Segment	Company inclusions
<b>Medium and small market capitalization integrated (continued)</b>	JSW Energy Ltd.
	Kyushu Electric Power Company, Inc.
	Ratchaburi Electricity Generating Holding Public Company Ltd.
	Shikoku Electric Power Company, Inc.
	The Chugoku Electric Power Co., Inc.
	The Tata Power Company Ltd.
	Tohoku Electric Power Company, Inc.
	Tokyo Electric Power Company Holdings, Inc.
	Trustpower Ltd.
	Vector Ltd.
<b>Gas utility</b>	APA Group
	China Gas Holdings Ltd.
	ENN Energy Holdings Ltd.
	Korea Gas Corporation
	Osaka Gas Co., Ltd.
	PT Perusahaan Gas Negara (Persero) Tbk
	Shenzhen Gas Corp. Ltd.
	The Hong Kong and China Gas Company Ltd.
	Toho Gas Co., Ltd.
	Tokyo Gas Co., Ltd.

## Asia-Pacific company segment tagging for valuations analysis (continued)

Segment	Company inclusions
Generation	Beijing Jingneng Clean Energy Co., Ltd.
	China Power International Development Ltd.
	Datang International Power Generation Co., Ltd.
	First Philippine Holdings Corp.
	GuiZhou QianYuan Power Co., Ltd.
	Huadian Power International Corp. Ltd.
	Huaneng Power International, Inc.
	Mercury NZ Ltd.
	NHPC Ltd.
	NTPC Ltd.
	OPG Power Ventures PLC
	Reliance Power Ltd.
	Zhejiang Zheneng Electric Power Co., Ltd.
	Renewables
China Datang Corp. Renewable Power Co., Ltd.	
Huaneng Renewables Corp. Ltd.	
Kong Sun Holdings Ltd.	
Meridian Energy Ltd.	
Ning Xia Yin Xing Energy Co., Ltd.	

Segment	Company inclusions
Water and wastewater	Beijing Enterprises Water Group Ltd.
	Beijing Water Business Doctor Co., Ltd.
	Binh Duong Water - Environment Joint Stock Company
	China Water Affairs Group Ltd.
	Chongqing Water Group Co., Ltd.
	Daiseki Co., Ltd.
	Eastern Water Resources Development and Management Public Company Ltd.
	Guangdong Investment Ltd.
	Luenmei Quantum Co., Ltd.
	Manila Water Company, Inc.
	SIIC Environment Holdings Ltd.
	TTW Public Company Ltd.
	Tus-Sound Environmental Resources Co., Ltd.
	VA Tech Wabag Ltd.
	WHA Utilities and Power Public Company Ltd.

EY | Assurance | Tax | Transactions | Advisory

**About EY**

EY is a global leader in assurance, tax, transaction and advisory services. The insights and quality services we deliver help build trust and confidence in the capital markets and in economies the world over. We develop outstanding leaders who team to deliver on our promises to all of our stakeholders. In so doing, we play a critical role in building a better working world for our people, for our clients and for our communities.

EY refers to the global organization, and may refer to one or more, of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. For more information about our organization, please visit [ey.com](http://ey.com).

© 2018 EYGM Limited.  
All Rights Reserved.

EYG no. 04822-184Gbl

BMC Agency  
GA 1009010

ED None

This material has been prepared for general informational purposes only and is not intended to be relied upon as accounting, tax or other professional advice. Please refer to your advisors for specific advice.

The views of third parties set out in this publication are not necessarily the views of the global EY organization or its member firms. Moreover, they should be seen in the context of the time they were made.

**[ey.com](http://ey.com)**

