



Corporate Finance & Capital Markets

Energy Quarterly Newsletter

Q4 2018

Energy Market Review

4Q 2018 Look-Back:

The last quarter of 2018 ended much like the year started, with swings in commodities and markets across various sectors. There were a few shining spots for 4Q 2018, notably, utility stock performance which was slightly above flat while other energy sectors and the overall market underperformed significantly for the quarter:

- WTI crude prices fell more than 40% while natural gas prices had a sudden increase to nearly \$5 in November before dropping back down to \$3 at the end of the year.
- The commodity price swings had an overall negative impact on energy, even large MLPs that have minimal direct commodity price exposure.
- Concerns over global growth had some investors moving into defensive, low beta and yield-oriented investments such as Utilities.

2019 Outlook:

Managing capital budgets for a lower-for-longer commodity price environment is a key priority for the oil and gas sector. Upstream investment is expected to remain largely flat or increase modestly during 2019, as US focused budgets are up 3% year over year⁽¹⁾. Production increases from the backlog of developed uncompleted wells will provide some of that growth in early part of 2019. However, given that demand growth is key to strong oil markets, any ongoing trade wars and concerns about Chinese growth are likely to continue contributing to the volatility in the oil and gas markets throughout the year.

The midstream is expected to have a number of final investment decisions of projects related to exports and increasing pipeline capacity due to ongoing growth from shale production. These projects include offshore export terminal and greenfield pipelines⁽¹⁾.

For Utilities, the PG&E pending restructuring dominated the news cycle during the last quarter and will continue to play a larger role in California utilities. On the other hand, we believe that most public utilities will continue to perform better than many sectors, as they will serve as defensive stocks within equity portfolios.

Commodity Prices

As of 12/31/2018
(USD)

	Spot	2019E	2020E
NYM WTI Crude (\$/bbl)	\$45.72	\$47.01	\$48.39
ICE Brent Crude (\$/bbl)	53.80	54.21	55.29
NYM Nat. Gas (\$/MMBtu)	2.85	2.90	2.66
Major ISOs (\$/mwh) ³	32.39	41.55	38.38

³Major ISOs consist of PJM, NYISO, NEPOOL, Midwest, WECC, and ERCOT markets; Based on median value of selected ISOs. Projections represent monthly averages for periods stated

Industry Benchmarks

(USD)	Q1'18	Q2'18	Q3'18	Q4'18
U.S. Oil Production (mmbbl/d)	10,235	10,537	11,244	11,728 ⁴
Global Oil Production (mmbbl/d)	82,240	81,824	82,931	84,064 ⁵
U.S. Gas Underground Storage (BCF)	6,091	6,176	7,005	7,491 ⁴
U.S. Power Demand (t/kwh)	8,805	8,016	8,387	8,103 ⁵

Figures represent quarterly averages for periods stated

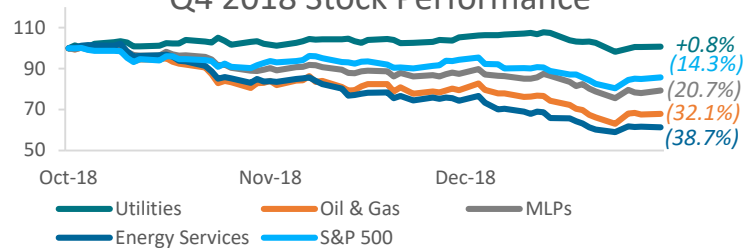
⁴Figure represents average of October and November, per latest info available

⁵Figure represents total for October, per latest info available

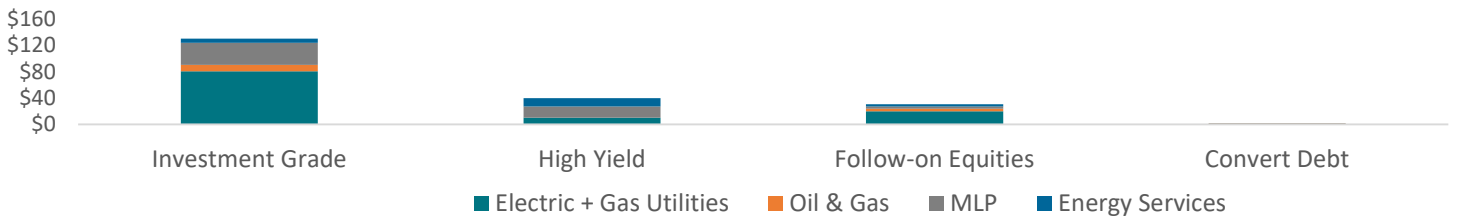
	Q1'18	Q2'18	Q3'18	Q4'18
Baker Hughes Rig Count (Domestic)	965	1,038	1,051	1,072
Baker Hughes Rig Count (International)	1,243	1,074	1,211	1,188

Figures represent quarterly averages for periods stated

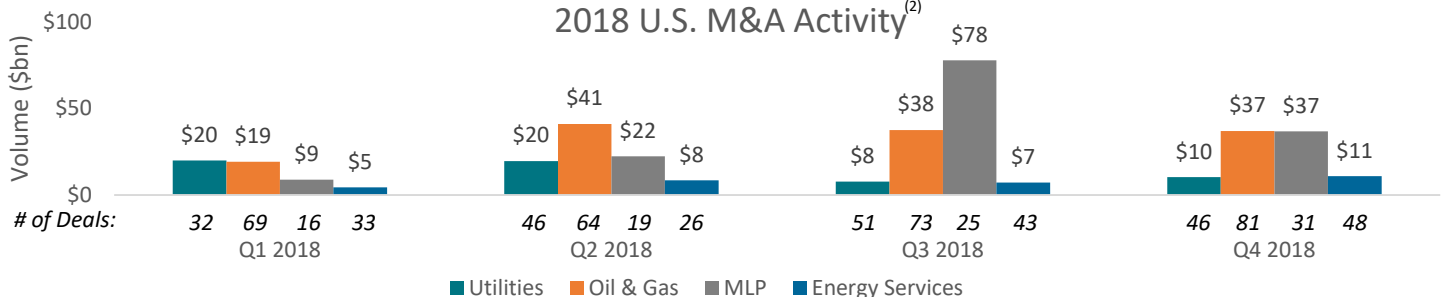
Q4 2018 Stock Performance



2018 U.S. Energy Capital Markets Activity



2018 U.S. M&A Activity⁽²⁾



Sources: Bloomberg, EIA, Baker Hughes, Siebert Cisneros Shank. Data as of 12/31/2018.

Note: Stock prices are indexed to 10/1/2018. **Utilities index** includes: AEE, AEP, AES, AWK, CMS, CNP, D, DTE, DUK, ED, EIX, ES, ETR, EVRG, EXC, FE, LNT, NEE, NI, NRG, PCG, PEG, PNW, PPL, SCG, SO, SRE, WEC & XEL. **Oil & Gas index** includes: APA, APC, COG, COP, CXO, DVN, EOG, EQT, HES, MRO, NBL, NFX, PXD & XEC. **MLP index** includes: AM, ANDX, APU, ARLP, BPL, BPMP, CEQP, CQP, CVRR, DCP, DM, EEP, ENBL, ENLK, EPD, EQM, ETP, GEL, GLOP, GMLP, HCLP, HEP, MMP, MPLX, NBLX, NGL, NS, PAA, PSXP, SEP, SHLX, SMLP, SPH, SUN, TCP, TGE, TGP, USAC, VLP, VNOM, WES, WPZ. **Energy Services index** includes: BHGE, FTI, HAL, HP, NOV, SLB.

(1) Source: Wood Mackenzie

(2) Represents transactions with U.S. target and with a target, acquirer, or seller that falls within the respective industries, including those with undisclosed values.

U.S. Energy M&A Activity

Announcements of large scale M&A transactions during the last quarter of 2018 decelerated quickly from earlier in the year. The slowdown can be attributed to various factors, including volatile global equity markets and the growing concerns of a global economic slowdown. The fluctuations in market valuations also created a challenging environment for buyers and sellers to converge on pricing, while boards were reluctant to accept low acquisition offers. However, small and mid-cap M&A activity in oil and gas remained steadily active, driven largely by strategic positioning to weather less favorable commodity prices. In addition, midstream M&A transactions exceeded \$100 billion in 2018, with almost all of the deals driven by GP/LP mergers to simplify MLP structures.

In our previous Q3 2018 publication, we emphasized that several energy players will focus on high-grading their portfolios through acquisitions in order to achieve long-term cash flow stability and business growth. We believe these themes will continue to drive activity in the energy services and oil and gas sectors through a consolidation of assets, while public utilities will focus primarily on earnings growth from organic projects as capital spending is expected to remain robust throughout 2019.

Q4 2018 Selected Transactions

Announcement Date	Buyer	Seller	Deal Type	Transaction Value (\$mil)
Utilities				
10/23/18	Aqua America Inc	Peoples Gas	Corp	\$4,275
11/26/18	The Carlyle Group	Emera (3 Natural Gas Facilities)	Asset	\$590
Oil & Gas				
10/17/18	Earthstone Energy Inc	Sabalo Energy LLC	Corp	\$950
10/28/18	Denbury Resources Inc	Penn Virginia Corp	Corp	\$1,981
10/30/18	Chesapeake Energy Corp	WildHorse Resource Development Corp	Corp	\$3,637
11/1/18	Encana Corp	Newfield Exploration Co	Corp	\$8,151
11/7/18	Vantage Energy Acquisition Corp	Williston & Uinta (Basin Assets)	Asset	\$1,650
11/19/18	Cimarex Energy Co	Resolute Energy Corp	Corp	\$1,514
11/19/18	Aethon Energy Management LLC	QEP Resources (Natural Gas and Oil Properties)	Asset	\$735
MLPs				
10/9/18	Antero Midstream GP LP	Antero Midstream Partners LP	Corp	\$5,805
10/18/18	Valero Energy Corp	Valero Energy Partners LP	Corp	\$950
10/22/18	EnLink Midstream LLC	EnLink Midstream Partners LP	Corp	\$10,322
11/8/18	Western Gas Equity Partners LP	Western Gas Partners LP	Corp	\$9,371
11/26/18	Arclight Capital Partners LLC	TransMontaigne Partners LP	Corp	\$1,117
11/26/18	Dominion Energy Inc	Dominion Energy Midstream Partners LP	Corp	\$876
11/30/18	Equitrans Midstream Corp	EQGP Holdings LP	Corp	\$529
Energy Services				
10/8/18	Ensco PLC	Rowan	Corp	\$3,562
10/8/18	Baker Hughes a GE Co	Abu Dhabi National Oil Co (Drilling)	Asset	\$550
10/21/18	WorleyParsons Ltd	Jacobs Engineering Group Inc (Energy Chemicals and Resources segments)	Asset	\$3,300

Deal Spotlight

Denbury Resources acquires Penn Virginia

- Penn Virginia shareholders to receive 12.4 shares of Denbury common stock and \$25.86 of cash for each share of Penn Virginia stock, equating to a \$1.98bn transaction value
 - Penn shareholders are permitted to elect to receive all cash, all stock, or a mix of both.
 - The transaction will be funded with a mix of equity, cash on hand, a new \$1.2bn senior secured credit facility, and a \$400mm senior secured second lien bridge financing.
- Forms a leading, diversified mid-cap oil producer with top-tier industry margins, strong production growth trajectory and ability to generate significant free cash flow.
- Immediately accretive to cash flow per share and other key per-share metrics.
- Anticipated transaction closing by Q1 2019 .

Aqua America acquires Peoples Gas

- Aqua America to acquire Peoples Gas from SteelRiver Infrastructure Partners for \$4.275bn, financing through a mix of equity and debt.
- Peoples consists of Peoples Natural Gas Company LLC, Peoples Gas Company LLC and Delta Natural Gas Company Inc. The multi-platform entity brings together the second-largest U.S. water utility and fifth-largest U.S. stand-alone natural gas local distribution company (based on customers).
- The combined company will operate regulated utilities over a 10-state footprint and will have its largest concentration in Pennsylvania, which will account for more than 77 percent of the company's total rate base. Aqua's rate base is growing annually at approximately 7 percent (2019-2021) and Peoples' rate base is growing annually at 8 to 10 percent (2019-2021)
- Anticipated transaction closing by Mid-2019.

U.S. Capital Markets

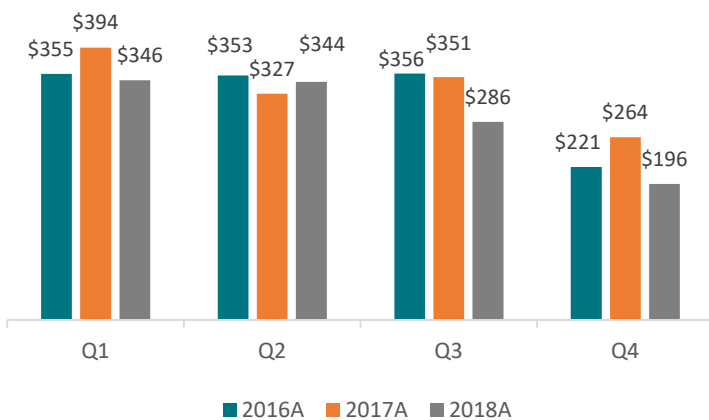
As of 12/31/2018, investment grade debt volumes, ex-SSA, include 776 deals totaling \$1,173 Billion across all investment grade issues. Energy, Services, Utilities, and Midstream represented 11.1% of those issuances.

The global green bond market has experienced exponential growth over the past 5 years. In 2017, the global green market hit a record \$160Bn in issuances, an increase of 85% from 2016, with France,

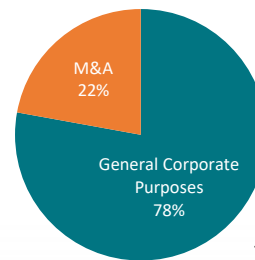
China and the U.S. accounting for 56% of the global issuance in 2017.

Within corporates, US Green bond issuances have grown significantly since 2014, as shown in the chart below. In 2018, the Financial and Utility corporates led the way in green bond issuances. Use of proceeds for these issuances range from energy projects, buildings, transportation and water

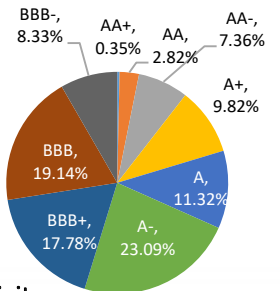
Investment Grade Debt New Issue Activity (\$BN)



Use of Proceeds



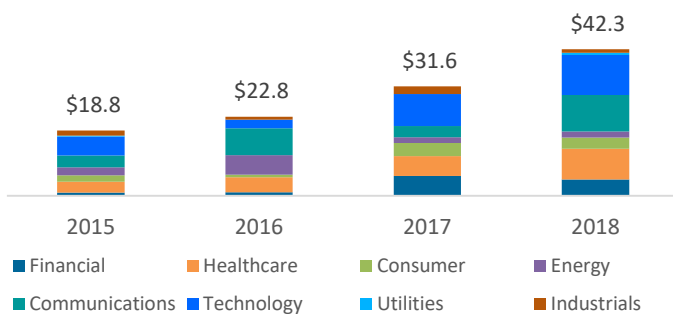
Rating¹



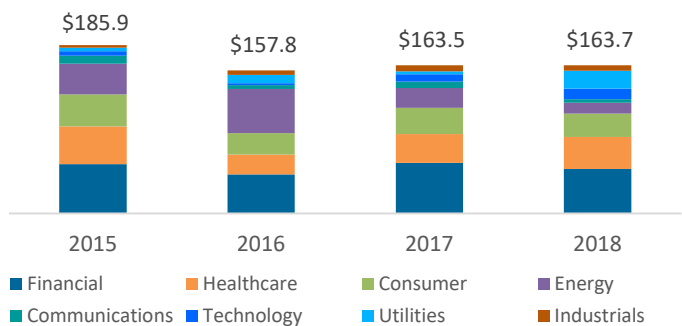
2018 Activity

¹Volumes exclude covered bonds and cumulative preferred

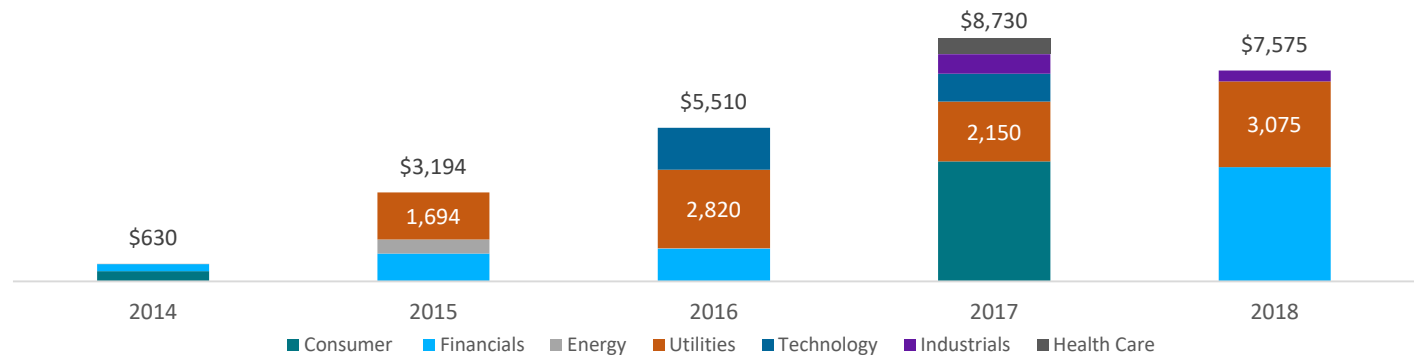
Convertible Bond Activity (\$BN)
























Common Equity Follow-On Activity (\$BN)



Corporate Green Bond Activity (\$MM)



Selected Recent Corporate Transactions

<p>\$700 million</p>  <p>Entergy Entergy Texas, INC.</p> <p>4.00% Notes due 2029 4.50% Notes due 2039</p> <p>Co-Manager January 2019</p>	<p>\$2.15 billion</p>  <p>Constellation Brands</p> <p>3NC1 FRN due 2021 4.40% Notes due 2025 4.65% Notes due 2028 5.25% Notes due 2048</p> <p>Co-Manager October 2018</p>	<p>\$800 million</p> <p>JPMORGAN CHASE & CO.</p> <p>2NC1 Inaugural SOFR0linked FRN</p> <p>Co-Manager October 2018</p>	<p>\$350 million</p>  <p>atlantic city electric</p> <p>4.00% Notes due 2028</p> <p>Co-Manager October 2018</p>	<p>\$1.1 billion</p>  <p>GAMING & LEISURE PROPERTIES, INC.</p> <p>5.25% Notes due 2025 5.30% Notes due 2029</p> <p>Bookrunner September 2018</p>	<p>\$1 billion</p>  <p>Prudential</p> <p>30NC10 Fixed-to-Float Notes</p> <p>Co-Manager September 2018</p>
<p>\$1.3 billion</p>  <p>Hewlett Packard Enterprise</p> <p>FRN Notes due 2021 3.50% Notes due 2021</p> <p>Co-Manager September 2018</p>	<p>\$1.475 billion</p> <p>JPMORGAN CHASE & CO.</p> <p>5.75% PerpNc5 \$25 par preferred</p> <p>Underwriter September 2018</p>	<p>\$837 million</p>  <p>BJ's</p> <p>32.20 million shares Follow On Offering</p> <p>Co-Manager September 2018</p>	<p>\$2.1 billion</p>  <p>GM</p> <p>FRN due 2021 FRN due 2028 FRN due 2049</p> <p>Co-Manager September 2018</p>	<p>\$5.0 billion</p>  <p>Pfizer</p> <p>6-part Debt Offering 3-year to 30-year notes</p> <p>Co-Manager September 2018</p>	<p>\$1.8 billion</p>  <p>McDonald's</p> <p>3.35% Tap due 2023 3.80% Tap due 2028 4.45% Notes due 2048</p> <p>Co-Manager August 2018</p>
<p>\$2.25 billion</p>  <p>Ford FORD CREDIT</p> <p>FRNs due 2021 3.813% Notes due 2021 4.687% Notes due 2025</p> <p>Selling Group August 2018</p>	<p>\$1.325 billion</p>  <p>AMERICAN WATER</p> <p>3.75% FMBs due 2028 4.20% FMBs due 2048</p> <p>Co-Manager August 2018</p>	<p>\$574.3 million</p>  <p>NATIONAL VISION</p> <p>14.44 million shares Follow On</p> <p>Co-Manager July 2018</p>	<p>\$825 million</p>  <p>at&t</p> <p>5.625% 49NC5 Global Notes due 2067</p> <p>Underwriter July 2018</p>	<p>\$6.0 billion</p>  <p>Bank of America</p> <p>6NC5 FRNs due 2024 6NC5 Note due 2024 11NC10 Notes due 2029</p> <p>Co-Manager July 2018</p>	<p>\$5.5 billion</p> <p>JPMORGAN CHASE & CO.</p> <p>6NC5 FRNs due 2024 6NC5 Note due 2024 11NC10 Notes due 2029</p> <p>Co-Manager July 2018</p>
<p>\$2.5 billion</p>  <p>citi</p> <p>4.65% Notes due 2048</p> <p>Co-Manager July 2018</p>	<p>\$733.1 million</p>  <p>BJ's</p> <p>43.125 million shares Initial Public Offering</p> <p>Co-Manager June 2018</p>	<p>\$500 million</p>  <p>Alabama Power</p> <p>4.00% Notes due 2048</p> <p>Co-Manager June 2018</p>	<p>\$16 billion</p>  <p>Walmart</p> <p>9-Part Debt Offering 2-year to 30-year Notes</p> <p>Co-Manager June 2018</p>	<p>\$4.5 billion</p>  <p>BARCLAYS</p> <p>FRNs due 2024 6NC5 due 2024 11NC10 due 2029</p> <p>Co-Manager May 2018</p>	<p>\$638.3 million</p>  <p>Pivotal</p> <p>42.55 million shares Initial Public Offering</p> <p>Co-Manager April 2018</p>

Selected Municipal Green Bond Transactions

City of Columbia, SC
Storm Water
 \$38 million
 Priced Dec. 6, 2018

City of Los Angeles
Wastewater
 \$220 million
 Priced Oct. 30, 2018

Sold in December 2018 as the City's inaugural green bond offering

- The transaction represents the City's first transaction receiving green bond designation and the first stand-alone stormwater transaction in the U.S. to receive Climate Bond Certification.
- In advance of the transaction, SCS worked closely with the City and the working group to evaluate alternatives for designating the bonds "green".
- Proceeds from the Bonds will be used to upgrade and improve the City's stormwater system, part of a \$95 million investment over the next five years to address flooding and stormwater drainage issues.
- The Bonds are secured solely by the Net Revenues of the System, including Stormwater Fees collected based on a property's impervious area.
- The transaction received strong interest, including orders from 36 investors -- with several stating that the Green Bond designation was a key factor in their investment decision .

Sold in October 2018 and included \$220 million of Green Bonds for new projects

- In 2015, SCS assisted the City of Los Angeles on its inaugural green bond transaction.
- Green projects to be financed include: wastewater reclamation facilities that support the overall treatment objective of meeting the discharge standards in the NPDES permits, wastewater collection and pumping facilities which reduce sewage spill and water recycling projects.
- Annual updates regarding the use of proceeds of the 2018-A Bonds will be posted to EMMA until fully expended.
- SCS ultimately received over \$450 million orders on the green bonds with several stating that the Green Bond designation was a key factor in their investment decision.

City of Los Angeles
Wastewater
 \$189 million
 Priced May 21, 2015

NYS Environmental
Facilities Corp.
 \$134 million
 Priced Aug. 31, 2016

Fort Bend Indpt.
School District
 \$48 million
 Priced Apr. 12, 2017

NYS Housing Finance
Agency
 \$41 million
 Priced Sep. 14, 2017

NYS Environmental
Facilities Corp.
 \$92 million
 Priced Oct. 19, 2017

Co-Senior & Co-Managed Municipal Green Bond Experience

Sale Date	Issuer	Par (\$MM)	SCS Role	Sale Date	Issuer	Par (\$MM)	SCS Role
10/12/2018	NYS Housing Fin-Mortgage Agcy	135.965	CO-MGR	5/11/2017	Metropolitan Transport Auth (MTA)	680.265	SR CO-MGR
10/4/2018	NYC Housing Dev Corp*	294.765	CO-MGR	5/10/2017	San Fran Bay Area Rapid Trans Dt	384.735	CO-MGR
8/17/2018	Metropolitan Transport Auth (MTA)	207.220	CO-MGR	5/9/2017	Los Angeles City-California	450.150	CO-SENIOR
7/18/2018	San Francisco City/Co Public Util Comm	229.050	CO-MGR	4/5/2017	Massachusetts Clean Water Trust	207.350	CO-MGR
6/22/2018	NYS Housing Fin-Mortgage Agcy	117.355	CO-MGR	3/29/2017	NYC Housing Dev Corp*	122.940	CO-MGR
5/10/2018	NYS Housing Fin-Mortgage Agcy	99.420	CO-MGR	3/10/2017	Metropolitan Transport Auth (MTA)	325.585	SR CO-MGR
4/5/2018	NYC Housing Dev Corp*	116.205	CO-MGR	3/10/2017	NYS Housing Fin-Mortgage Agcy	107.970	CO-MGR
2/22/2018	California Infrstr & Eco Dev Bank	449.225	CO-MGR	2/15/2017	Metropolitan Transport Auth (MTA)	531.803	SR CO-MGR
12/6/2017	NYC Housing Dev Corp*	298.470	CO-MGR	1/17/2017	New Jersey Envi Infrast Trust	72.830	CO-MGR
11/22/2017	Metropolitan Transport Auth (MTA)	2,021.462	CO-MGR	1/6/2017	NYS Housing Fin-Mortgage Agcy	53.995	CO-MGR
10/25/2017	NYS Housing Fin-Mortgage Agcy	115.215	CO-MGR	12/16/2016	NYS Housing Fin-Mortgage Agcy	45.125	CO-MGR
10/26/2017	Nashville-Davidson Co Metro Govt	89.420	CO-MGR	9/29/2016	NYC Housing Dev Corp*	281.850	CO-MGR
10/11/2017	Indiana Finance Authority	145.540	CO-MGR	6/28/2016	Massachusetts	250.000	CO-MGR
9/20/2017	Metropolitan Transport Auth (MTA)	662.025	SR CO-MGR	6/10/2016	NYC Housing Dev Corp*	163.850	CO-MGR
6/23/2017	NYS Housing Fin-Mortgage Agcy	78.420	CO-MGR	6/7/2016	Greater Chicago Metro Wtr Rec Dt	104.000	CO-SENIOR
6/15/2017	Long Beach City-California	25.985	CO-MGR	5/20/2016	Metropolitan Transport Auth (MTA)	588.305	CO-SENIOR
6/2/2017	Connecticut	250.000	CO-MGR	4/12/2016	California Infrstr & Eco Dev Bank	410.735	CO-MGR

Green highlighting reflects Climate Bond Certified transactions

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*The Capital Markets team joined SCS in 2014.

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