



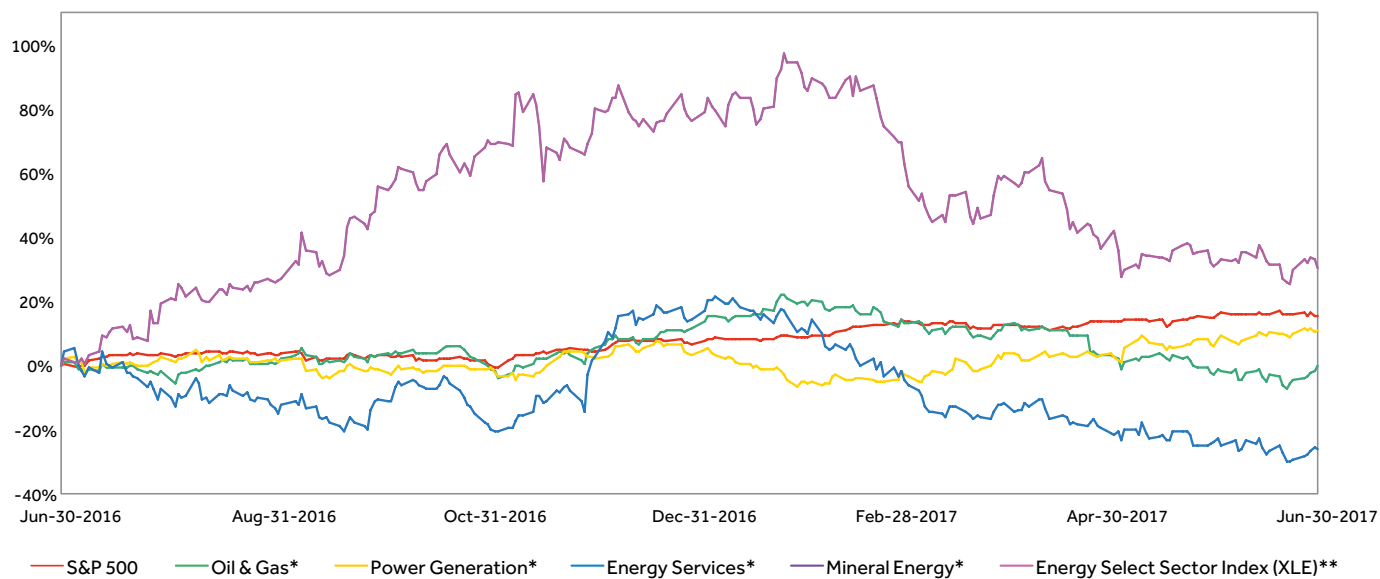
NOBLE CAPITAL MARKETS NEWSLETTER

ENERGY
QUARTERLY REVIEW



ENERGY SECTOR NEWSLETTER

ENERGY SECTOR LTM EQUITY PERFORMANCE



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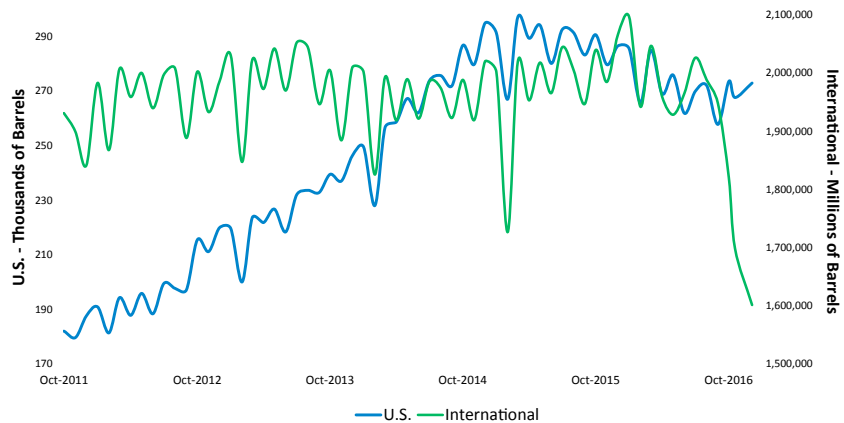
* Noble Proprietary Sector (index composed of companies in the comparable table)
 ** Energy Select Sector SPDR ETF (refer to disclosure section for more information)

Source: Capital IQ

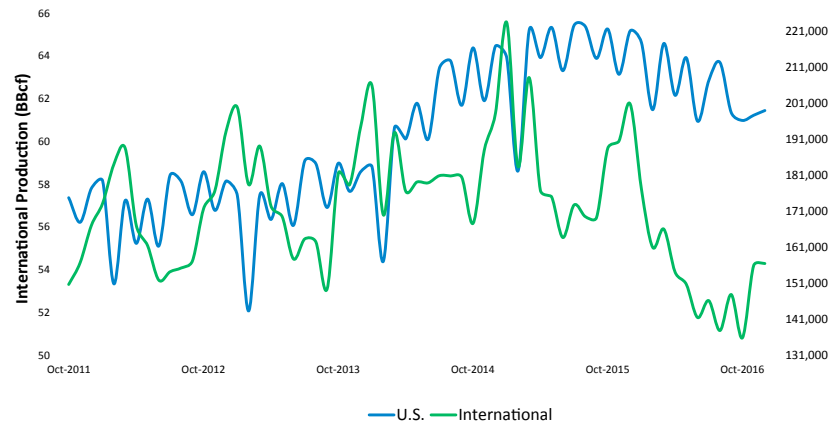


ENERGY – FUNDAMENTAL DATA (5 Year Period)

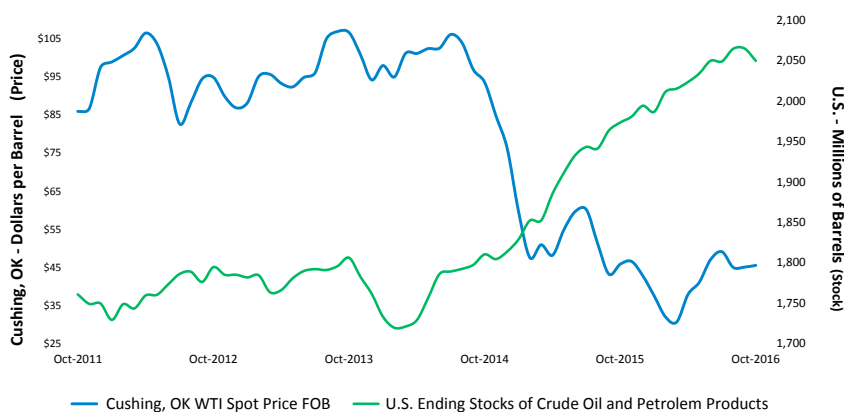
CRUDE OIL PRODUCTION



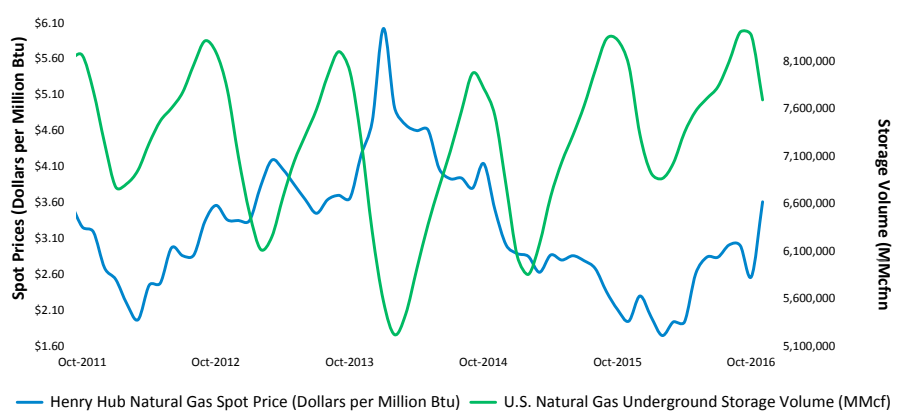
NATURAL GAS PRODUCTION



STOCK VS. PRICE



STORAGE VS. PRICE



Source: Energy Information Administration, JODI

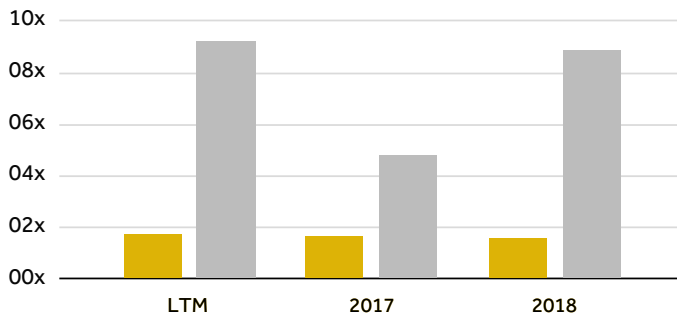


ENERGY INDUSTRY OUTLOOK

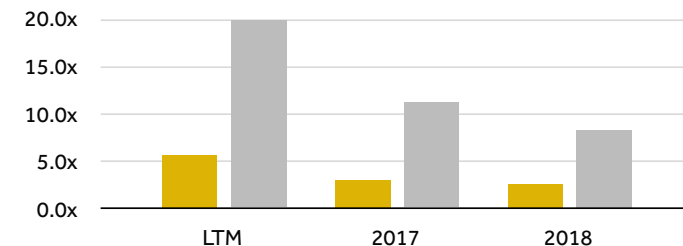
OIL & GAS ENERGY INDUSTRY OUTLOOK

Exploration and production stocks in the energy industry (as measured by the XLE) declined 6.5% in the June quarter in response to an 11.5% decline in West Texas Intermediate oil prices. At prices now in the mid to low forties, production economics are once again being tested even as companies continue to work to lower the cost of production. A sustained price at current levels will undoubtedly result in a pullback in drilling, with the subsequent effect in production, and expected bounce back on prices. We expect such a reaction to be quick and reiterate our belief that oil is likely to trade in a narrow range between \$45 and \$55 per barrel for the next several years. We continue to maintain a cautious outlook towards the group. We favor and support companies that maintain strong balance sheets, have a large hedge position, and operate in regions with low operating costs.

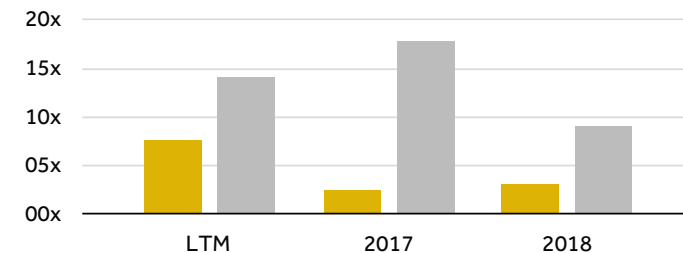
MINERAL ENERGY MULTIPLES



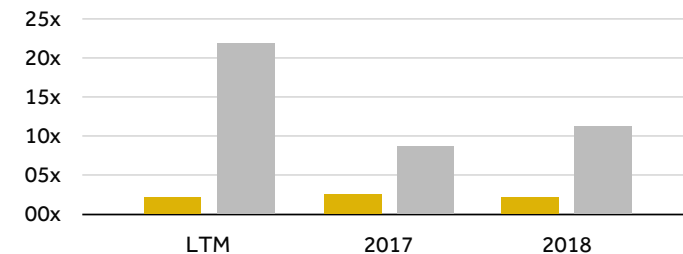
OIL AND GAS MULTIPLES



POWER GENERATION MULTIPLES



ENERGY SERVICES MULTIPLES



■ EV/Revenue ■ EV/EBITDA

*LTM data as of 6/30/17
Source: Capital IQ



OIL & GAS

COMPARABLE TABLES

Exploration and Production Index

	TICKER	CHANGE IN STOCK PRICE		SHARE PRICE	% OF 52 WEEK HIGH	MARKET CAP (\$MM)	NET DEBT (\$MM)	ENT. VALUE (\$MM)	LTM		EV/REVENUE			EV/EBITDA			EBITDA MARGIN
		3-MONTH	12-MONTH						REVENUES (\$MM)	EBITDA (\$MM)	LTM	2017E	2018E	LTM	2017E	2018E	
Torchlight Energy Resources, Inc.	NasdaqCM:TRCH	20%	202%	\$1.66	84.7%	99	4	103	0	-7	NA	NA	NA	NA	NA	NA	NA
Jones Energy, Inc.	NYSE:JONE	-40%	-58%	\$1.60	32.6%	106	702	1,339	134	29	10.0x	6.5x	4.2x	46.9x	7.9x	6.5x	21%
Freedom Oil and Gas Ltd	ASX:FDM	-15%	59%	\$0.07	48.3%	52	0	32	0	-8	NA	NA	NA	NA	NA	NA	NA
Lilis Energy, Inc.	AMEX:LLEX	23%	145%	\$4.90	86.1%	248	36	277	6	-16	42.7x	6.3x	2.6x	NA	13.7x	4.2x	NA
BNK Petroleum Inc.	TSX:BKK	-16%	-38%	\$0.14	39.6%	32	20	45	9	0	5.2x	1.5x	1.1x	NA	3.4x	2.9x	NA
Approach Resources, Inc.	NasdaqGS:AREX	34%	60%	\$3.37	77.5%	284	358	642	99	39	6.5x	5.6x	4.8x	16.3x	9.9x	8.2x	40%

Mean	16.1x	5.0x	3.2x	31.6x	8.7x	5.4x	30.6%
Median	8.2x	6.0x	3.4x	31.6x	8.9x	5.3x	30.6%

Midstream Index

	TICKER	CHANGE IN STOCK PRICE		SHARE PRICE	% OF 52 WEEK HIGH	MARKET CAP (\$MM)	NET DEBT (\$MM)	ENT. VALUE (\$MM)	LTM		EV/REVENUE			EV/EBITDA			EBITDA MARGIN
		3-MONTH	12-MONTH						REVENUES (\$MM)	EBITDA (\$MM)	LTM	2017E	2018E	LTM	2017E	2018E	
USD Partners LP	NYSE:USDP	-8%	16%	\$11.20	64.0%	295	210	501	111	56	4.5x	4.5x	4.2x	8.9x	8.5x	8.1x	51%
Sanchez Midstream Partners LP	AMEX:SNMP	-17%	17%	\$12.85	80.7%	181	159	681	72	21	9.5x	7.0x	7.3x	32.4x	10.5x	8.9x	29%
PBF Logistics LP	NYSE:PBFX	-10%	-15%	\$19.50	83.8%	816	544	1,459	211	143	6.9x	5.9x	5.4x	10.2x	9.1x	7.3x	68%
American Midstream Partners, LP	NYSE:AMID	-12%	9%	\$12.85	69.6%	672	996	1,958	290	34	6.8x	2.4x	2.2x	57.3x	9.9x	8.8x	12%
Southcross Energy Partners, L.P.	NYSE:SXE	-8%	58%	\$3.17	66.9%	248	539	792	584	58	1.4x	1.2x	1.0x	13.6x	11.2x	9.9x	10%
Dorian LPG Ltd.	NYSE:LPG	-21%	16%	\$8.18	65.4%	450	750	1,183	51	79	NA	7.2x	6.2x	NA	16.2x	13.7x	NA

Mean	5.8x	4.7x	4.4x	24.5x	10.9x	9.5x	33.9%
Median	6.8x	5.2x	4.8x	13.6x	10.2x	8.9x	29.2%

OIL & GAS

COMPARABLE TABLES

Refining and Marketing Index

	TICKER	CHANGE IN STOCK PRICE		SHARE PRICE	% OF 52 WEEK HIGH	MARKET CAP (\$MM)	NET DEBT (\$MM)	ENT. VALUE (\$MM)	LTM		EV/REVENUE			EV/EBITDA			EBITDA MARGIN
		3-MONTH	12-MONTH						REVENUES (\$MM)	EBITDA (\$MM)	LTM	2017E	2018E	LTM	2017E	2018E	
Calumet Specialty Products	NasdaqGS:CLMT	13%	-13%	\$4.25	66.3%	326	2,059	2,396	3,824	192	0.6x	0.7x	0.7x	12.5x	8.8x	8.6x	5%
Emerge Energy Services LP	NYSE:EMES	-33%	-22%	\$9.01	36.9%	271	161	430	138	-48	3.1x	1.1x	0.7x	NA	12.2x	3.3x	NA
Trecora Resources	NYSE:TREC	1%	8%	\$11.25	76.0%	273	84	353	216	27	1.6x	1.5x	1.3x	13.2x	11.2x	7.9x	12%
Par Pacific Holdings, Inc.	AMEX:PARR	11%	18%	\$18.04	99.8%	826	360	1,139	2,092	77	0.5x	0.5x	0.4x	14.9x	10.1x	8.9x	4%
Sprague Resources LP	NYSE:SRLP	4%	17%	\$28.20	91.7%	635	549	1,168	2,585	98	0.5x	0.4x	0.4x	11.9x	9.5x	8.7x	4%
Clean Energy Fuels Corp.	NasdaqGS:CLNE	-3%	-27%	\$2.54	52.9%	382	255	564	396	32	1.4x	1.6x	1.4x	17.5x	43.4x	19.7x	8%

Mean	1.3x	1.0x	0.8x	14.0x	15.9x	9.5x	6.6%
Median	1.0x	0.9x	0.7x	13.2x	10.6x	8.6x	5.0%

Retail & Commerce

	TICKER	CHANGE IN STOCK PRICE		SHARE PRICE	% OF 52 WEEK HIGH	MARKET CAP (\$MM)	NET DEBT (\$MM)	ENT. VALUE (\$MM)	LTM		EV/REVENUE			EV/EBITDA			EBITDA MARGIN
		3-MONTH	12-MONTH						REVENUES (\$MM)	EBITDA (\$MM)	LTM	2017E	2018E	LTM	2017E	2018E	
Gas Natural Inc.	AMEX:EGAS	3%	85%	\$12.93	99.7%	136	62	190	101	10	1.9x	NA	NA	18.5x	NA	NA	10%
Star Gas Partners, L.P.	NYSE:SGU	17%	22%	\$10.84	92.6%	606	81	633	1,296	93	0.5x	0.5x	NA	6.8x	6.7x	NA	7%
Superior Plus Corp.	TSX:SPB	-10%	7%	\$8.79	65.9%	1,255	689	1,950	1,603	172	1.2x	0.9x	0.8x	11.3x	6.7x	6.2x	11%
CrossAmerica Partners LP	NYSE:CAPL	1%	4%	\$25.50	91.3%	860	574	1,428	1,893	73	0.8x	0.7x	0.6x	19.7x	13.1x	11.6x	4%
NGL Energy Partners LP	NYSE:NGL	-36%	-28%	\$14.00	54.3%	1,691	2,993	4,715	13,021	283	0.4x	0.4x	0.3x	16.7x	10.7x	8.5x	2%
Global Partners LP	NYSE:GLP	-7%	32%	\$18.05	82.2%	606	1,341	1,934	8,760	225	0.2x	0.2x	0.2x	8.6x	8.9x	9.1x	3%

Mean	0.8x	0.5x	0.5x	13.6x	9.2x	8.9x	6.1%
Median	0.6x	0.5x	0.4x	14.0x	8.9x	8.8x	5.5%

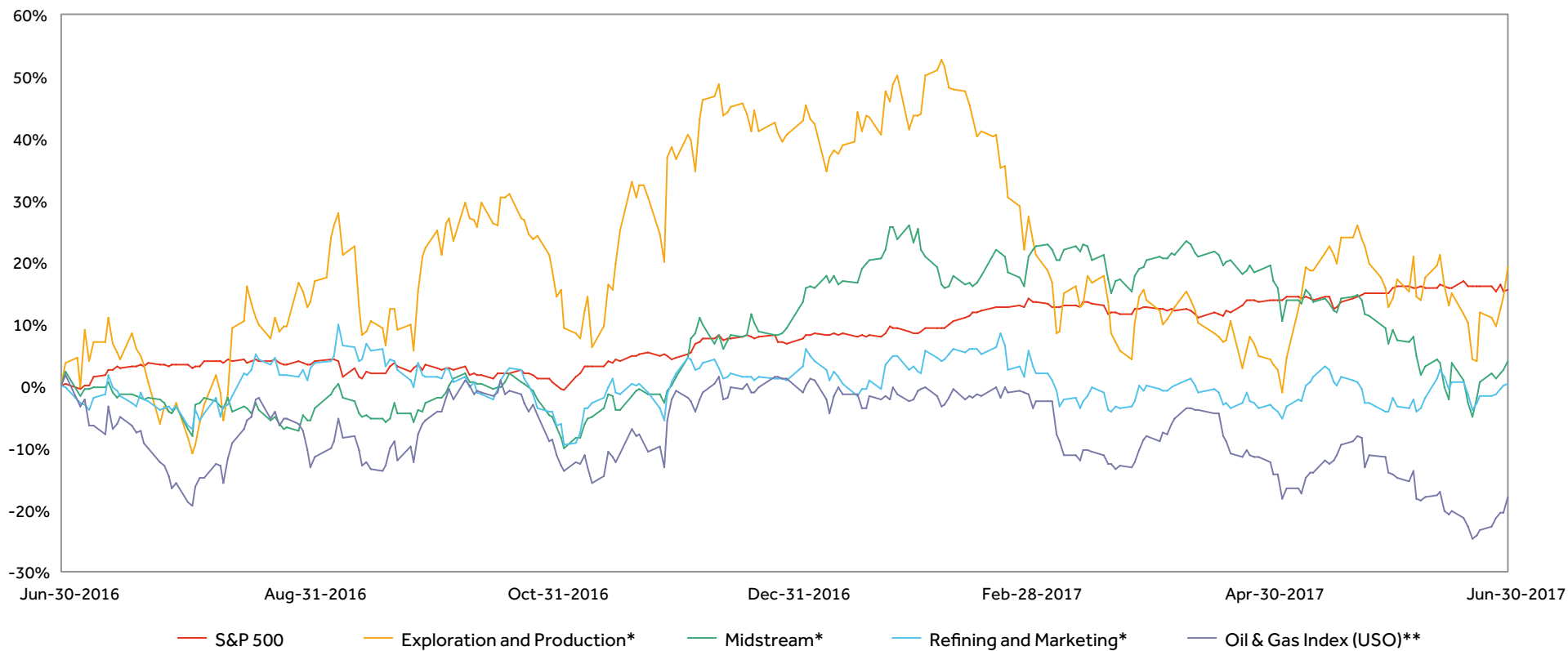
Source: Capital IQ

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OIL & GAS LTM EQUITY PERFORMANCE

(NOBLE INDEX SELECTION)



* Noble Proprietary Sector (index composed of companies in the comparable table)

** SPDR S&P Oil & Gas Exploration & Production ETF (refer to disclosure section for more information)

Source: Capital IQ



OIL & GAS LTM GLOBAL M&A ACTIVITY

DATE	BUYER	TARGET	TRANSACTION VALUE (\$M)	EV / EBITDA	EV / REVENUE
05/18/2017	Energy Transfer Partners, L.P.	PennTex Midstream Partners, LLC	433.06	32.3x	12.5x
04/11/2017	Borealis Infrastructure Trust	Enagas Chile S.p.A.	341.0	-	-
04/11/2017	NuStar Logistics, L.P.	First Reserve Corporation	1,475.0	-	-
04/10/2017	Waterous Energy Fund; Waterous Energy Fund	NGP IX Northern Blizzard S.à r.l.	606.71	34.3x	2.1x
04/04/2017	Itaúsa - Investimentos Itaú S.A.	Brookfield Brasil Asset Management Investimentos Ltda	922.31	-	-
03/31/2017	Tallgrass Energy Partners, LP	Tallgrass Development, LP	400.0	-	-
03/15/2017	Painted Pony Petroleum Ltd.	Unconventional Resources Canada, LP	294.0	-	-
03/08/2017	Canadian Natural Resources Limited	Marathon Oil Corporation	2,500.0	-	-
02/28/2017	EIG Global Energy Partners	Elba Liquefaction Company	555.0	-	-
02/06/2017	Antero Midstream	Sherwood Midstream	155.0	-	-
01/23/2017	Targa Resources Partners	Outrigger Delaware Operating	925.24	-	-
01/20/2017	PERN Przyjazń	Polski Koncern Naftowy ORLEN Spolka Akcyjna	366.68	4.6x	0.5x
01/03/2017	Venado EF	SM Energy ST	747.4	-	-
12/17/2016	REN - Redes Energéticas Nacionais	Electrogas	180.0	-	-
12/15/2016	São Martinho	Nova Fronteira Bioenergia	118.98	-	-
12/07/2016	Glencore Plc	Public Joint Stock Company	11,290.32	5.3x	1.2x
11/08/2016	Siccar Point Energy	OMV	1,000.0	-	-
10/31/2016	Dominion Midstream Partners	Questar Pipeline	1,721.2	10.0x	6.7x
10/24/2016	Buckeye Partners	Vitol Tank Terminals International B.V.	1,150.0	-	-
10/13/2016	RSP Permian	Silver Hill Energy Partners	1,231.12	-	-
10/06/2016	Public Joint Stock Company	Public Joint Stock Oil Company Bashneft	7,102.95	6.4x	1.4x
09/22/2016	Allianz Capital Partners	Gas Connect Austria GmbH	675.39	-	5.0x
09/15/2016	ONGC Videsh	ZAO Vankorneft	2,200.0	-	-
08/08/2016	Inter Pipeline	Williams Energy Canada	666.58	-	-
07/14/2016	Wolf Infrastructure	Access Pipeline Inc.	1,199.65	-	-
07/10/2016	The Southern Company	Southern Natural Gas Company	2,674.5	10.3x	7.3x
07/07/2016	Riverstone Holdings	Centennial Resource Production	1,528.43	30.5x	20.9x
07/01/2016	Gran Tierra Energy	Petrolatina Energy	525.0	13.3x	6.4x
06/25/2016	Beijing Enterprises Group Company Limited	PJSC Verkhnechonskneftegaz	1,100.0	-	-
06/20/2016	Marathon Oil Corporation	PayRock Energy	888.0	-	-
06/15/2016	Dutch Infrastructure Fund	Thyssengas GmbH	787.36	-	-
06/09/2016	Aker BP ASA	BP Norge AS	1,680.35	-	1.7x
05/16/2016	Range Resources Corporation	Range Resources - Louisiana, Inc.	6,937.25	9.0x	10.0x
04/27/2016	Suncor Energy	Syncrude Canada	741.35	-	-
04/21/2016	Con Edison Gas Pipeline and Storage	Stagecoach Gas Services	975.0	-	-
03/24/2016	Xinneng (Hong Kong) Energy Investment Limited	Santos Limited	755.0	10.9x	4.5x
03/20/2016	Charter Power Investment Limited	Bankers Petroleum	559.79	4.1x	2.0x
	Mean		1,551.61	14.2x	5.9x

Source: Capital IQ

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POWER GENERATION

COMPARABLE TABLES

Renewable and Cleantech Index

	TICKER	CHANGE IN STOCK PRICE		SHARE PRICE	% OF 52 WEEK HIGH	MARKET CAP (\$MM)	NET DEBT (\$MM)	ENT. VALUE (\$MM)	LTM		EV/REVENUE			EV/EBITDA			EBITDA MARGIN
		3-MONTH	12-MONTH						REVENUES (\$MM)	EBITDA (\$MM)	LTM	2017E	2018E	LTM	2017E	2018E	
8point3 Energy Partners LP	NasdaqGS:CAFD	10%	-4%	\$15.13	87.3%	425	719	1,729	67	52	25.7x	NA	NA	33.5x	NA	NA	77%
Pacific Ethanol, Inc.	NasdaqCM:PEIX	-7%	15%	\$6.25	57.1%	273	198	426	1,669	51	0.3x	0.2x	0.2x	8.4x	8.6x	4.8x	3%
Synthesis Energy Systems, Inc.	NasdaqCM:SYMX	-20%	-36%	\$0.67	46.2%	58	0	50	6	-12	8.9x	NA	NA	NA	NA	NA	NA
Gevo, Inc.	NasdaqCM:GEVO	-34%	-94%	\$0.69	4.3%	10	18	8	27	-18	0.3x	0.4x	0.2x	NA	NA	NA	NA
Aemetis, Inc.	NasdaqGM:AMTX	5%	-42%	\$1.33	53.2%	26	119	145	141	1	1.0x	1.0x	0.9x	NA	42.6x	15.4x	0%
Renewable Energy Group, Inc.	NasdaqGS:REGI	28%	47%	\$12.95	99.2%	500	234	648	1,854	96	0.3x	0.3x	0.3x	6.8x	5.6x	5.3x	5%

Mean	6.1x	0.5x	0.4x	16.2x	18.9x	8.5x	21.4%
Median	0.7x	0.3x	0.3x	8.4x	8.6x	5.3x	4.1%

Utilities Index & Independent Power Producers

	TICKER	CHANGE IN STOCK PRICE		SHARE PRICE	% OF 52 WEEK HIGH	MARKET CAP (\$MM)	NET DEBT (\$MM)	ENT. VALUE (\$MM)	LTM		EV/REVENUE			EV/EBITDA			EBITDA MARGIN
		3-MONTH	12-MONTH						REVENUES (\$MM)	EBITDA (\$MM)	LTM	2017E	2018E	LTM	2017E	2018E	
Etrion Corporation	TSX:ETX	-12%	-39%	\$0.20	48.4%	66	326	341	17	0	20.4x	10.2x	8.1x	NA	37.4x	16.4x	2%
Spark Energy, Inc.	NasdaqGS:SPKE	19%	14%	\$18.80	79.5%	244	30	380	632	115	0.6x	0.5x	0.5x	3.3x	3.3x	2.9x	18%
Genie Energy Ltd.	NYSE:GNE	7%	13%	\$7.62	91.7%	188	1	156	221	8	0.7x	NA	NA	19.0x	NA	NA	4%
Maxim Power Corp.	TSX:MXG	3%	-6%	\$2.09	56.0%	114	0	104	5	-12	21.1x	NA	8.8x	NA	NA	NA	NA
Atlantic Power Corporation	TSX:ATP	-9%	-4%	\$2.36	64.4%	272	949	1,378	391	153	3.5x	3.0x	3.6x	9.0x	5.3x	7.2x	39%
RGC Resources, Inc.	NasdaqGM:RGCO	32%	75%	\$28.33	88.6%	205	50	254	61	18	4.2x	NA	NA	14.2x	NA	NA	29%

Mean	8.4x	4.6x	5.3x	11.4x	15.3x	8.8x	18.6%
Median	3.8x	3.0x	5.9x	11.6x	5.3x	7.2x	18.2%

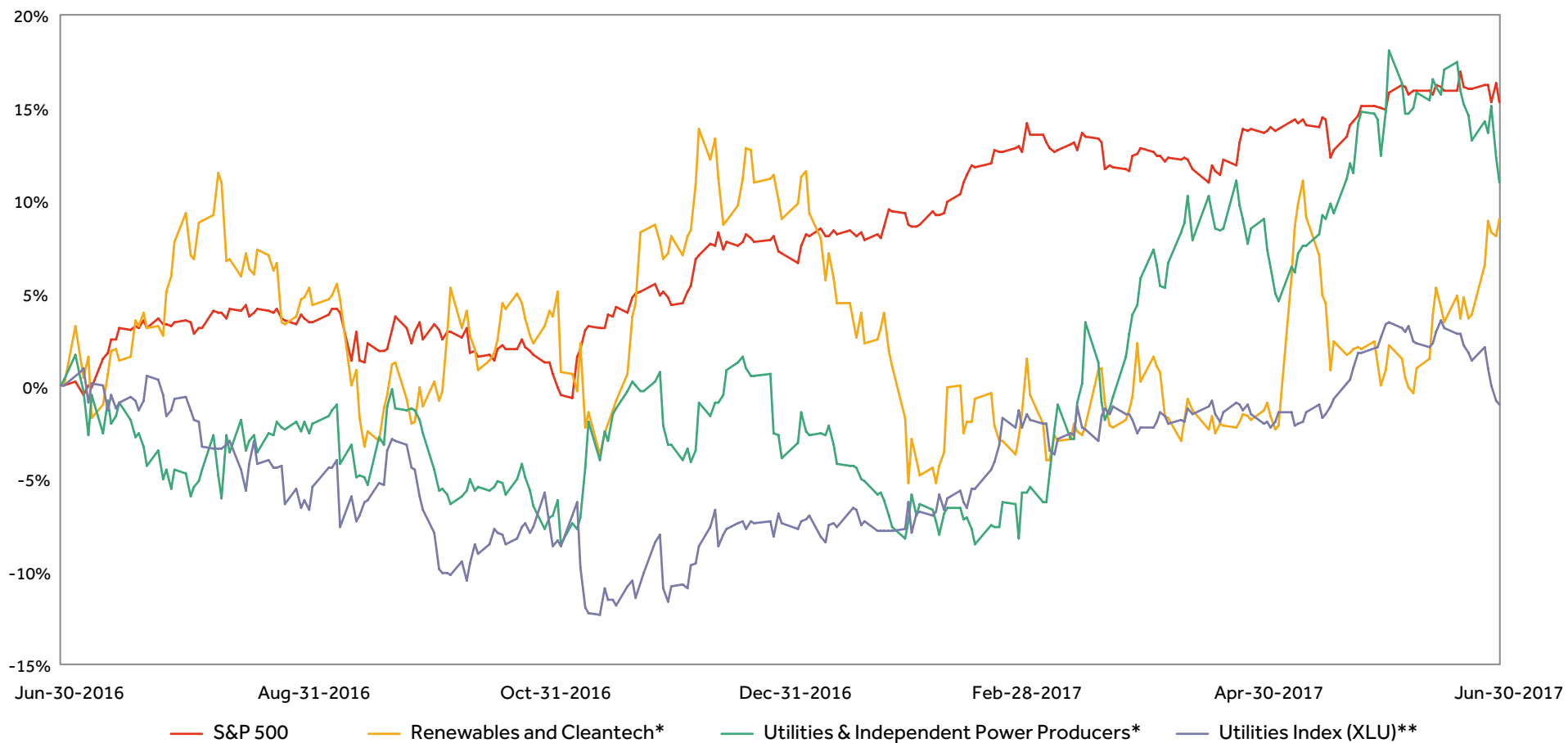
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POWER GENERATION LTM EQUITY PERFORMANCE

(NOBLE INDEX SELECTION)



* Noble Proprietary Sector (index composed of companies in the comparable table)
 ** Utilities Select Sector SPDR ETF (refer to disclosure section for more information)

Source: Capital IQ



POWER GENERATION LTM GLOBAL M&A ACTIVITY

DATE	BUYER	TARGET	TRANSACTION VALUE (\$M)	EV / EBITDA	EV / REVENUE
03/14/2017	Algonquin Power & Utilities Corp.	Renewable Energy Systems Americas, Inc.	283.8	-	-
05/11/2017	British Columbia Investment Management Corporation	Endeavour Energy	11,764.2	28.6x	13.0x
04/24/2017	EDF Energies Nouvelles S.A.	Boussard & Gavaudan Gestion S.A.S	385.99	10.1x	7.3x
01/24/2017	Fiera Infrastructure Inc.; Fiera Infra LP	Suncor Energy Inc.	291.0	-	-
01/25/2017	Fiera Infrastructure	Cedar Point II	222.32	-	-
01/13/2017	UK Green Investment Bank	Lincs Wind Farm Limited	890.56	-	-
12/26/2016	Oita Mega Solar	Oita Solar Power Corporation	341.65	-	10.2x
12/23/2016	Enea AB	ENGIE Energia Polska	299.18	-	-
12/06/2016	BRKB, Private Equity Arm	Mantiqueira Transmissora de Energia	930.85	-	-
10/31/2016	3i Infrastructure plc	Infinis	650.1	5.1x	2.9x
10/29/2016	Enel Américas	Endesa Américas	1,439.01	6.2x	3.4x
10/17/2016	Abu Dhabi Investment Authority	Scotia Gas Networks Limited	756.78	12.2x	7.4x
10/10/2016	China Three Gorges (Luxembourg) Energy	Duke Energy International Brazil Holdings	1,200.0	-	-
10/09/2016	Calpine Corporation	Noble Americas Energy Solutions	1,048.0	-	-
09/23/2016	IFM Investors Pty	Ausgrid	11,799.61	16.8x	8.1x
08/09/2016	NRG Yield Operating	CVSR Holdco	574.5	-	-
07/27/2016	Endesa Generación	Endesa Renovables	1,327.03	-	-
07/22/2016	Brookfield Colombia Investments	Isagen	625.21	18.4x	4.8x
07/05/2016	Inversiones Apalta	Gasco	737.16	6.3x	1.2x
07/01/2016	State Grid International Development Co.	CPFL Energia	1,803.22	10.4x	2.3x
06/16/2016	CMS Energy Brasil	AES Sul Distribuidora Gaúcha de Energia	831.13	10.9x	0.9x
06/13/2016	China Three Gorges Corporation	WindMW GmbH	1,800.0	-	-
06/03/2016	C/R Energy Jade	Talen Energy Corporation	5,483.68	4.6x	1.3x
05/30/2016	Capital Stage AG	CHORUS Clean Energy AG	750.76	14.5x	10.1x
05/27/2016	Beacon Electric Asset Holdings, Inc.	Global Business Power Corporation	473.33	-	-
05/16/2016	OOO Telmamskaya GES	Irkutsk Public Joint Stock Company	1,070.58	9.0x	1.8x
05/10/2016	Energinet.dk	DONG Gas Distribution A/S	352.07	6.4x	-
04/26/2016	Spire Inc.	EnergySouth	390.0	-	-
04/20/2016	GIC Pte.	ITC Holdings Corp.	1,219.59	15.0x	10.2x
04/06/2016	SALA Corporation	Chubu Gas Co.	419.66	7.5x	1.1x
03/29/2016	I Squared Capital Advisors	Viridian Group Holdings Limited	1,119.01	-	0.5x
03/15/2016	Brookfield Asset Management Inc.	Isagen	968.06	16.4x	4.7x
02/09/2016	Fortis Inc.	ITC Holdings Corp.	11,478.35	16.4x	11.0x
02/09/2016	Liberty Utilities (Central) Co.	The Empire District Electric Company	2,398.51	10.9x	4.0x
		Mean	1,944.85	11.9x	5.3x

Source: Capital IQ

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ENERGY SERVICES

COMPARABLE TABLES

Oilfield Services Index

	TICKER	CHANGE IN STOCK PRICE		SHARE PRICE	% OF 52 WEEK HIGH	MARKET CAP (\$MM)	NET DEBT (\$MM)	ENT. VALUE (\$MM)	LTM		EV/REVENUE			EV/EBITDA			EBITDA MARGIN
		3-MONTH	12-MONTH						REVENUES (\$MM)	EBITDA (\$MM)	LTM	2017E	2018E	LTM	2017E	2018E	
Key Energy Services, Inc.	NYSE:KEG	-17%	8265%	\$19.24	50.6%	387	247	551	408	-95	1.4x	1.2x	0.8x	NA	NA	6.4x	NA
Newpark Resources, Inc.	NYSE:NR	-8%	27%	\$7.35	84.0%	653	157	740	516	9	1.4x	1.1x	0.9x	NA	13.0x	7.2x	2%
ION Geophysical Corporation	NYSE:IO	-8%	-30%	\$4.35	51.8%	52	157	160	183	32	0.9x	0.9x	0.7x	5.0x	4.0x	2.3x	17%
Geospace Technologies Corporation	NasdaqGS:GEOS	-14%	-16%	\$13.83	56.8%	186	0	138	70	-30	2.0x	NA	NA	NA	NA	NA	NA
Tidewater Inc.	NYSE:TDW	-29%	-84%	\$0.72	13.8%	34	2,034	1,371	584	50	2.3x	2.7x	2.5x	27.4x	NA	27.6x	9%
Hornbeck Offshore Services, Inc.	NYSE:HOS	-35%	-66%	\$2.83	29.4%	104	1,087	982	192	23	5.1x	6.5x	5.5x	41.9x	NA	NA	12%

Mean	2.2x	2.5x	2.1x	24.8x	8.5x	10.9x	10.0%
Median	1.7x	1.2x	0.9x	27.4x	8.5x	6.8x	10.4%

Drillers Index

	TICKER	CHANGE IN STOCK PRICE		SHARE PRICE	% OF 52 WEEK HIGH	MARKET CAP (\$MM)	NET DEBT (\$MM)	ENT. VALUE (\$MM)	LTM		EV/REVENUE			EV/EBITDA			EBITDA MARGIN
		3-MONTH	12-MONTH						REVENUES (\$MM)	EBITDA (\$MM)	LTM	2017E	2018E	LTM	2017E	2018E	
Atwood Oceanics, Inc.	NYSE:ATW	-14%	-35%	\$8.15	53.0%	656	1,298	1,519	711	376	2.1x	3.5x	3.6x	4.0x	11.6x	29.7x	53%
Western Energy Services Corp.	TSX:WRG	-25%	-47%	\$1.35	38.3%	99	199	278	131	9	2.1x	1.1x	0.9x	30.5x	6.8x	4.3x	7%
Pacific Drilling S.A.	NYSE:PACD	-24%	-76%	\$1.71	23.2%	36	3,018	2,556	670	327	3.8x	7.0x	6.0x	7.8x	NA	21.3x	49%
Xtreme Drilling Corp.	TSX:XDC	-2%	-21%	\$1.59	52.0%	118	0	49	29	-11	1.7x	0.7x	0.5x	NA	7.7x	2.4x	NA
Ensign Energy Services Inc.	TSX:ESI	-11%	-5%	\$5.33	51.2%	826	558	1,372	640	125	2.1x	1.3x	1.1x	11.0x	6.6x	4.9x	19%
Pioneer Energy Services Corp.	NYSE:PES	-47%	-55%	\$2.05	28.5%	158	374	525	298	11	1.8x	1.2x	0.9x	46.7x	10.6x	5.1x	4%

Mean	2.3x	2.5x	2.1x	20.0x	8.7x	11.3x	26.4%
Median	2.1x	1.3x	1.0x	11.0x	7.7x	5.0x	19.5%

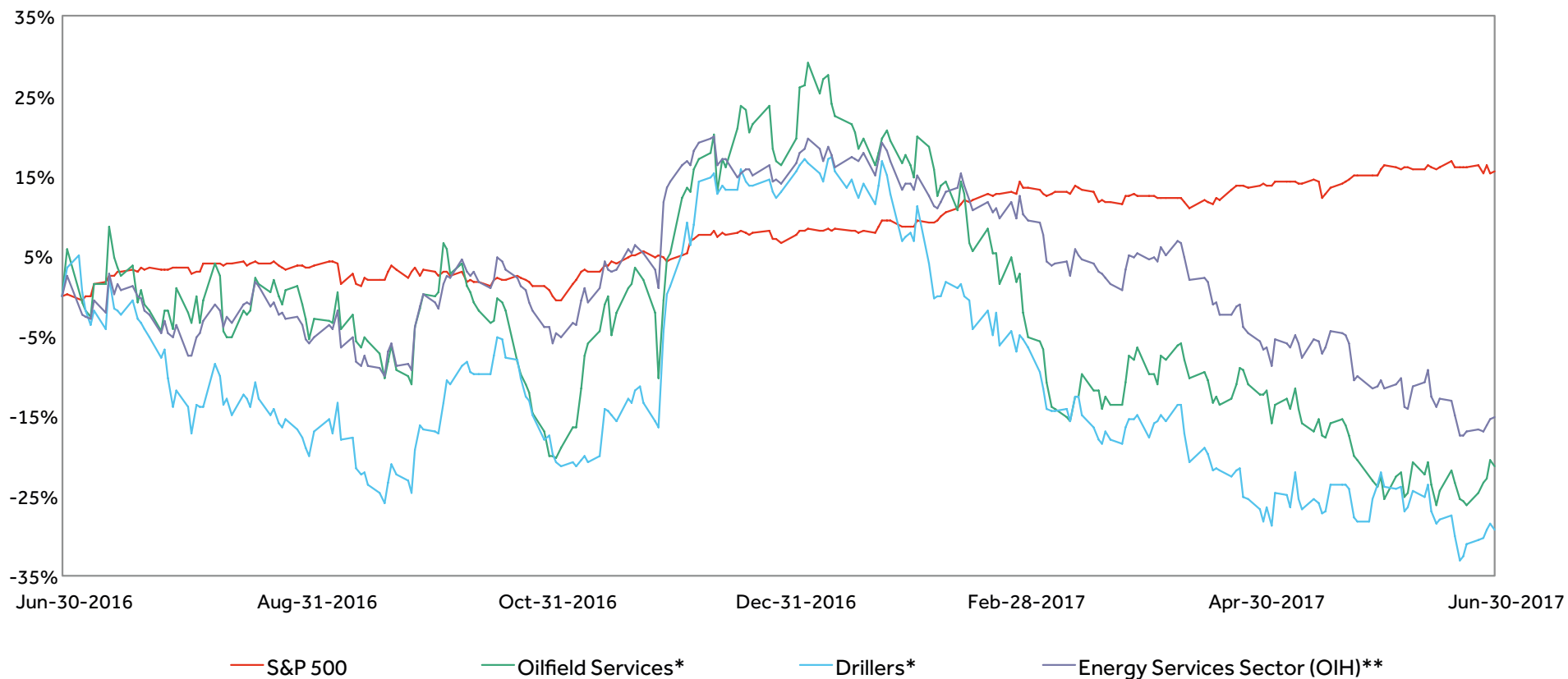
Source: Capital IQ

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ENERGY SERVICES LTM EQUITY PERFORMANCE

(NOBLE INDEX SELECTION)



* Noble Proprietary Sector (index composed of companies in the comparable table)
 ** SPDR S&P Oil & Gas Equipment & Services ETF (refer to disclosure section for more information)

Source: Capital IQ



ENERGY SERVICES LTM GLOBAL M&A ACTIVITY

DATE	BUYER	TARGET	TRANSACTION VALUE (\$M)	EV / EBITDA	EV / REVENUE
05/19/2017	Total Energy Services Inc.	Fidelity Management & Research Company	154.95	13.0x	1.4x
04/23/2017	KMG Chemicals, Inc.	Arsenal Capital Partners	495.0	-	-
03/21/2017	Trican Well Service Ltd.	Connor, Clark & Lunn Investment Management Ltd	630.83	-	-
02/06/2017	Solstad Offshore ASA (nka:Solstad Farstad ASA)	Fidelity Management & Research Company	10,494.02	-	3.7x
02/06/2017	Solstad Offshore ASA (nka:Solstad Farstad ASA)	DNB Markets	5,536.66	-	17.1x
01/17/2017	Subsea 7	Seaway Heavy Lifting Holding Limited	319.0	-	-
12/21/2016	Public Joint Stock Company Rosneft Oil Company	Targin OOO	67.14	-	-
10/26/2016	National Oilwell Varco	Fjords Processing	145.18	10.9x	0.6x
10/17/2016	Dril-Quip	TIW Corporation	142.7	-	-
10/17/2016	Trinity View Sdn Bhd	Yinson Holdings Berhad	87.14	17.0x	11.4x
10/13/2016	CIRCOR International	Critical Flow Solutions Inc.	214.0	8.6x	1.8x
10/10/2016	Haimo Technologies Group Corp.	Xi'An Sitan Instruments Co.	33.14	-	-
10/03/2016	Emerson Electric Co.	Permasense Limited	52.1	-	-
08/28/2016	Tercel Oilfield Products	Logan International Inc.	95.75	-	1.8x
08/23/2016	Sembcorp Marine	PPL Shipyard Pte	115.06	-	-
08/10/2016	Hi-Crush Partners	Hi-Crush Blair	179.87	-	-
08/02/2016	U.S. Silica Holdings	Sandbox Enterprises	212.47	-	-
08/01/2016	Transocean Ltd.	Transocean Partners	267.23	4.4x	2.6x
07/28/2016	Solstad Offshore	Rem Offshore	497.75	7.7x	3.5x
07/01/2016	PetroFirst Infrastructure 2 Limited	PV Keez Pte. Ltd.	166.35	-	-
06/10/2016	Nippon Yusen Kabushiki Kaisha	EMAS CHIYODA Subsea Limited	93.5	-	-
05/19/2016	Technip SA	FMC Technologies	7,836.19	8.4x	1.2x
05/19/2016	Robit Oyj	Drilling Tools Australia	47.51	-	1.9x
05/16/2016	Hong Kong HuiHua Global Technology	Anton Oilfield Services DMCC	107.28	-	3.1x
04/22/2016	Consilium AB	Micropack (Engineering)	27.32	-	-
02/17/2016	Yokogawa Electric Corporation	KBC Advanced Technologies plc	248.37	14.0x	2.1x
02/15/2016	Genesis Energy	Deepwater Gateway	25.0	-	-
02/10/2016	Exor N.V.	Welltec A/S	115.89	9.0x	3.5x
02/08/2016	Bonheur	Ganger Rolf	61.95	-	-
02/03/2016	Vallourec Tubes	Anhui Tianda Oil Pipe Company Limited	64.94	33.8x	0.6x
		Mean	951.14	12.7x	3.8x

Source: Capital IQ

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MINERAL ENERGY

COMPARABLE TABLES

Mineral Energy

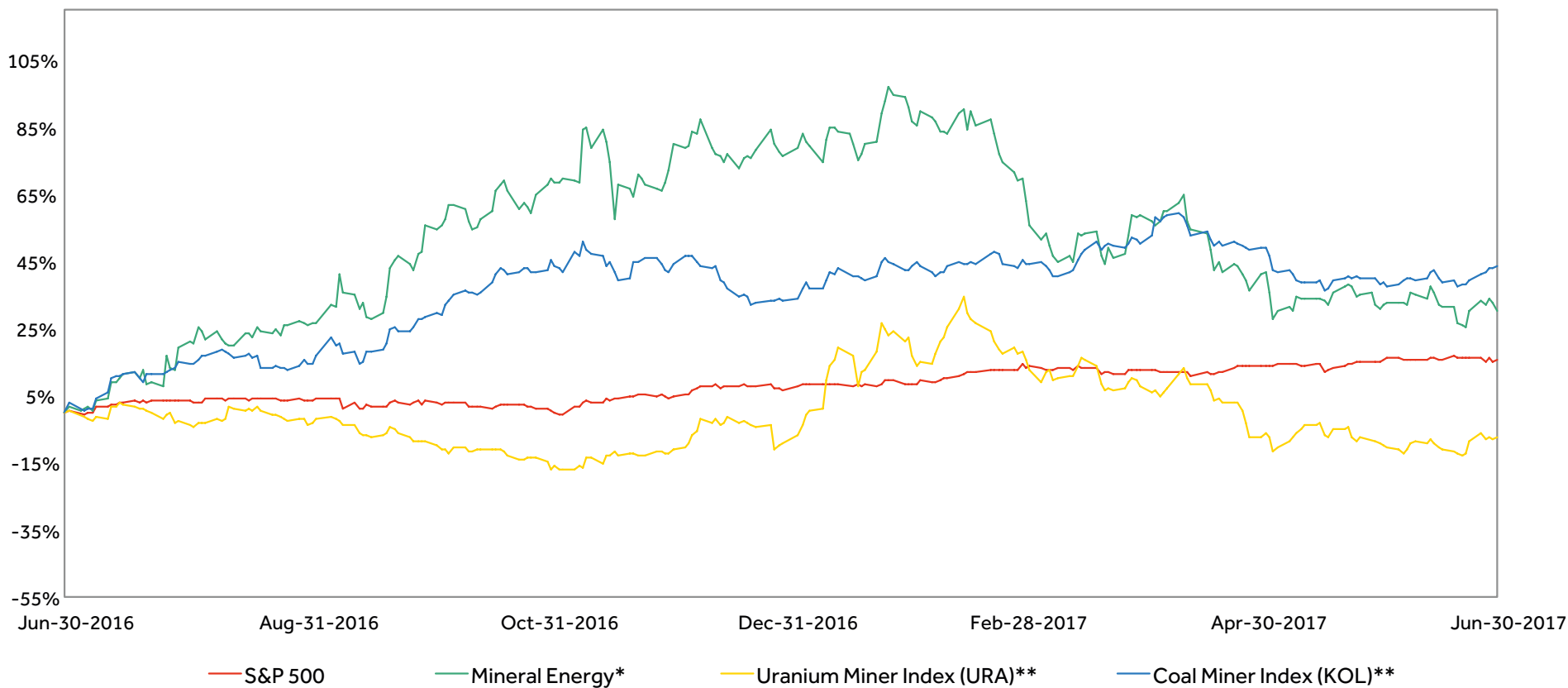
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		3-MONTH	12-MONTH						REVENUES (\$MM)	EBITDA (\$MM)	LTM	2017E	2018E	LTM	2017E	2018E	
Energy Fuels Inc.	NYSE:UUUU	-26%	-29%	\$1.59	44.9%	112	30	133	40	-32	3.3x	2.9x	3.0x	NA	NA	NA	NA
CNX Coal Resources LP	NYSE:CNXC	-9%	61%	\$14.95	67.0%	349	194	618	300	88	2.1x	1.9x	1.7x	7.1x	5.7x	5.0x	29%
Cloud Peak Energy Inc.	NYSE:CLD	-23%	71%	\$3.53	43.9%	265	422	586	786	124	0.7x	0.6x	0.6x	4.7x	5.9x	6.2x	16%
Corsa Coal Corp.	TSXV:CSO	-27%	7%	\$1.15	30.2%	109	41	155	139	8	1.1x	0.5x	0.5x	19.0x	2.0x	1.7x	6%
UR-Energy Inc.	TSX:URE	-7%	6%	\$0.63	53.0%	92	23	107	39	17	2.7x	2.4x	1.9x	6.4x	5.6x	22.7x	42%
Centrus Energy Corp.	AMEX:LEU	-26%	29%	\$4.23	44.7%	38	160	51	229	-62	0.2x	NA	NA	NA	NA	NA	NA

Mean	1.7x	1.7x	1.6x	9.3x	4.8x	8.9x	23.2%
Median	1.6x	1.9x	1.7x	6.7x	5.7x	5.6x	22.4%



MINERAL ENERGY LTM EQUITY PERFORMANCE

(NOBLE INDEX SELECTION)



* Noble Proprietary Sector (index composed of companies in the comparable table)

** VanEck Vectors Coal ETF (refer to disclosure section for more information)

Source: Capital IQ



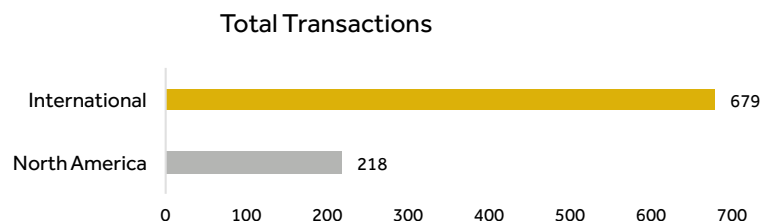
MINERAL ENERGY LTM GLOBAL M&A ACTIVITY

DATE	BUYER	TARGET	TRANSACTION VALUE (\$M)	EV / EBITDA	EV / REVENUE
04/03/2017	Murray Energy Corporation	Foresight Reserves, LP	15.0	-	-
01/11/2017	Voyage Wisdom Limited	SouthGobi Resources	24.04	-	8.7x
12/23/2016	Joint Stock Company Atomic Energy Power Corporation	OJSC Sibirsky Khimichesky Kombinat	-	-	-
12/14/2016	Collines Investments	Deep Yellow Limited	1.94	-	-
08/30/2016	Smart Alliance Ltd; Oceanpro Investments Limited	PT. Fajar Bumi Sakti	90.0	-	-
08/04/2016	Atrum Coal Limited	Atlantic Carbon Group plc	6.02	5.0x	1.9x
07/29/2016	AssetOwl Limited	Regalpoint Resources Limited	-	-	-
06/29/2016	Agencja Rozwoju Przemyslu	Walbrzyskie Zaklady Koksownicze Victoria	87.92	-	-
05/31/2016	Atlantic Carbon Group	Hazleton Shaft Corporation	25.0	-	-
04/28/2016	JSC ARMZ Uranium Holding Co.	Uranium One Holding	-	-	-
		Mean	35.7	5.0x	5.3x

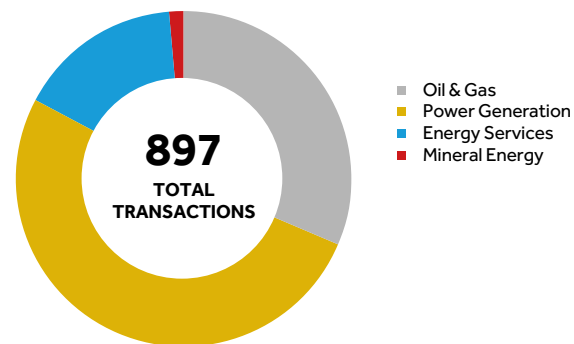


LTM ENERGY INDUSTRY M&A SUMMARY

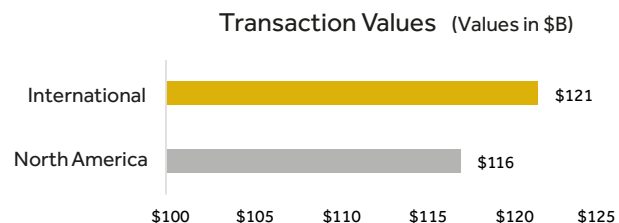
NORTH AMERICA VS. INTERNATIONAL TOTAL TRANSACTIONS *(Number of transactions)*



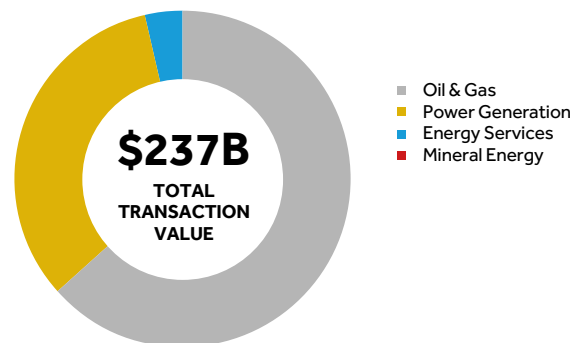
TOTAL TRANSACTIONS *(Number of transactions)*



NORTH AMERICA VS. INTERNATIONAL TOTAL TRANSACTION VALUE *(Values in \$B)*



TOTAL TRANSACTION VALUE *(Values in \$B)*



Source: Capital IQ (Based on Available Data)



NOBLE QUARTERLY HIGHLIGHTS

SYNTHESIS ENERGY SYSTEMS

LATEST NEWS:

- Synthesis Energy Systems, Inc. announced today that it has entered into a definitive Technology License Agreement with Australian Future Energy Pty Ltd (AFE) for a large-scale project to be located in Australia. Based on the terms of the agreement, SES will receive fees based on the licensed capacity for the project, and for the Process Design Package (PDP), totaling \$27 million. In addition to the Technology License and PDP, SES will immediately begin providing technical services to AFE related to the development of the project. It is expected that the project will purchase proprietary equipment from SES which, based on the license capacity of the project, could be valued at approximately \$120 million and would be contracted soon after completion of the PDP.



TORCHLIGHT ENERGY RESOURCES, INC.

LATEST NEWS:

- Torchlight Energy Resources, Inc. announced that it will move a rig onto location this week to commence drilling the Flying B Ranch #3H, the Company's first horizontal well to be drilled on its Permian Basin (Midland Basin) assets. The well is expected to encounter multiple (stacked) pay zones and is planned to have a lateral leg length of 8000 feet targeting the Wolfcamp A formation. Drilling is expected to begin by Sunday and completion procedures including a multi-stage frac are scheduled for late July or Early August. Additionally, Torchlight has scheduled the second and previously announced frac on the Flying B Ranch #2 vertical test well for June 30th and will be targeting the Leonard formation with that procedure.



AEMETIS, INC.

LATEST NEWS:

- Aemetis, Inc. announced today that its Universal Biofuels subsidiary in India has signed a three-year biofuels supply agreement with BP Singapore Pte Limited (BPS), the regional trading arm of BP Plc, which has an expanding biofuels portfolio.



MIDSTATES PETROLEUM

LATEST NEWS:

- Midstates Petroleum Company, Inc. announced that Nelson M. Haight, Executive Vice President & Chief Financial Officer of the Company, would resign from his position effective June 15, 2017 to pursue other opportunities. Subsequent to Mr. Haight's departure, his duties and responsibilities will be assumed by other members of the Company's management team.



$$R + (e^2 + p^2) = \text{NF}$$

NOBLE CAPITAL MARKETS

NOBLE CAPITAL MARKETS

NOBLE CAPITAL MARKETS is a research-driven investment and merchant bank focused on small cap, emerging growth companies in the healthcare, technology, media and natural resources sectors. That's what we are. Who we are is what makes us different.

Our people are talented, dedicated, experienced professionals who come together with a common cause; advising on long-term client-solutions by employing innovative, collaborative and responsive strategies. We're passionate and personable. We approach things from our clients' perspective.

We know that developing lasting relationships is reliant upon putting our clients' interests before ours. We understand the impact of our services. Insightful advisory and effective capital procurement can change lives. Empowering our clients to create employment, engineer technological and medical breakthroughs, producing products and services that lay the foundation for the future. For more than 30 years these have been our guiding principles. While much has changed over the three decades since we began, these core values and our reputation have not. Our clients must know what to expect from us. Then we can strive to exceed expectations.

A SIMPLE FORMULA. OUR VALUE PROPOSITION

It starts with research With a fundamental belief that information guides the management process, NOBLE understands that there is no short-path to success. With this as a solid foundation, apply experience and execution delivered by people with passion. This is our formula to add value to your creation.

Research + Experience & Execution + People with Passion = Value

FULL-SERVICE INVESTMENT BANK

- Established 1984.
- Private firm, employee owned.
- Built on commitment to provide value and support for our clients.

FOCUSED INSTITUTIONAL SALES AND TRADING

- Seasoned sales and sales trading team.
- Long standing relationships with premier growth- focused Investors.

INVESTMENT BANKING COMMITMENT

- Proven track record.
- Senior level attention to every client and transaction
- Ability to deliver complete "mind share" of NOBLE on all transactions.

RESEARCH DRIVEN CAPITAL MARKETS PLATFORM

- Experience team of Research Analysts covering approximately 100 companies.
- Focus on Technology, Media, Healthcare and Natural Resources.
- Strong Institutional Sponsorship.

$$R + (e^2 + p^2) = \text{TF}$$

INVESTMENT BANKING

Our investment banking team, together with our well-recognized equity research analysts and the equity capital markets group, provide our clients with fundamental capital markets advisory and support - prior, during and most importantly, after a transaction. NOBLE's investment banking team works closely with the management and Board of our corporate clients in order to fully understand operational and financial objectives. With this knowledge our banking team will develop an efficient and effective advisory program which offers a variety of services including:

EQUITY CAPITAL MARKETS

- Secondary and Follow-on Offerings
- Registered Direct Offerings
- Initial Public Offerings
- At the market Offerings (ATM's)
- PIPEs/Private Sale Offerings















DEBT CAPITAL MARKETS

- Senior Debt
- Mezzanine
- Convertible Debt
- Bridge Financings

ADVISORY SERVICES

- Merger & Acquisitions
- Fairness Opinions
- Valuation Services

SELECT NATURAL RESOURCES TRANSACTIONS

 MARLIN <small>GOLD MINING LTD.</small> (MLN)	 SES <small>SPRINKLER SYSTEM SYSTEMS</small> (SYM)	 AVINO SILVER & GOLD MINES LTD. (ASM)	 PETROSHARE (PRHR)	 pershing gold (PGLC)	 AVINO SILVER & GOLD MINES LTD. (ASM)	 RING <small>ENERGY, INC.</small> (REI)
Advisory	Advisory	\$800,000	\$4,600,000	\$11,500,000	\$5,000,000	\$57,500,000
Corporate Advisory	Corporate Advisory	Private Placement of Registered Securities Sole Placement Agent	Initial Public Offering (IPO) Lead Underwriter	Private Placement Sole Placement Agent	Private Placement of Registered Securities Sole Placement Agent	Follow-on Offering Co-Manager
 February 2017	 January 2017	 March 2016	 November 2015	 April 2015	 February 2014	 December 2013

$$R + (e^2 + p^2) = \text{rf}$$

VALUATION SERVICES

NOBLE's Valuation and Advisory Services team specializes in providing business and intangible asset valuations, fairness opinions, financial and strategic analysis, and transaction support services covering a broad spectrum of industries and situations from early stage, middle market and Fortune 500 companies and capital market constituents. NOBLE's team is made up of professionals with numerous accreditations and bring excellence in accounting, taxation, and financial due diligence to provide companies with valuation advice for a multitude of purposes.

Valuation – NOBLE's professionals have significant experience in the valuation of privately owned and public businesses across a wide range of industries. We perform an extensive analysis of the business as well as evaluate industry trends and various other factors in order to inform our clients as to the likely range of value they can expect. Our services are characterized by intellectual and analytical rigor and our conclusions are backed by thorough documentation.

Chief Accounting Officers, Corporate Controllers, CFOs, and Corporate Boards rely on Noble's experienced valuation professionals to produce sophisticated, supportable, and timely valuations to assist in complying with financial reporting requirements, including:

- Purchase price allocation and fresh start accounting
- Goodwill and long-lived asset impairment testing
- Tangible asset valuation
- Fair Value measurement of financial assets & liabilities

Opinions - Whether our clients are looking to fulfill their fiduciary duties, mitigate risk or determine corporate value, we are there throughout the transaction process to offer objective advice based on rigorous analysis. We work on behalf of boards of directors, investors, trustees and other corporate leaders to advise and provide opinions on a wide range of transactions.

We have advised Corporate Boards, special transaction committees, independent trustees, management and other fiduciaries of middle-market public and private companies on the financial aspects of a transaction. Our independent advice withstands scrutiny from shareholders, bondholders, the SEC, IRS, or counterparties to a transaction..

MERCHANT BANKING

Our Principal Investment focus is primarily on private and small-cap public (\$10mill to \$50mill market caps) companies in industries within NOBLE's research verticals. Investments are made directly by NOBLE and its affiliates and may also involve syndicate participants. We work to identify those companies with game-changing or superior products and technologies that have management teams with proven track-records of success. NOBLE structures investments to meet a company's capital needs whether its growth capital, liquidity or debt repayment. Capital commitment ranges from \$200k to \$2million principal and \$2million above with syndicate.

The scope of our Merchant Banking activities includes:

- Targeting domestic companies within our areas of focus and expertise
- Analyzing a company's opportunities and assessing its risks within their respective industry
- Structuring, negotiating and executing the transaction
- Work in assessing the appropriate time and manner in which to harvest the investment

NOBLE's Merchant Banking Team works continuously with our portfolio companies to assist the management team and Board of Directors to create value and grow their businesses to facilitate long-term shareholder value. Through our extensive sector research coverage, institutional investor non-deal road shows, equity conferences and market making, we blend a powerful mix of capital markets acumen to procure success.

$$R + (e^2 + p^2) = \text{RF}$$

NATURAL RESOURCE IB TEAM

Richard Giles, Managing Director

rgiles@noblecapitalmarkets - 617.692.9346

- Joined NOBLE in 2010 as Head of the Technology, Media & Telecommunications Investment Banking Group.
- 25 years of investment banking experience.
- Executed more than 100 M&A and capital raising transactions totaling \$10+ billion.
- Former head of Stifel Nicolaus' Technology Group.
- Former head of A.G. Edwards' Emerging Growth Group and member of Investment Committee for A.G. Edwards Capital.
- A.B., Harvard College; M.B.A., Harvard Business School.

Stevan Grubic, Director- Valuation Services

sgrubic@noblecapitalmarkets - 323.578.4936

- 15 years of middle-market investment banking experience
- Expertise in valuations, including business valuations, fairness opinions, litigation, and valuations for financial and tax reporting purposes (ASC805, ASC350, 123R, 409A).
- Accredited Senior Appraiser with the American Society of Appraisers (ASA) and has completed over 100 valuation engagements representing well over \$1.0 billion in asset values.
- Prior experience includes Orion Valuation Group, Singer Lewak, B. Riley & Co., L.H. Friend Weinress, Frankson & Presson and North American Capital Partners.

Francisco Penafiel, Vice President

fpenafiel@noblecapitalmarkets - 561.994.5740

- Executed M&A and capital raising transactions totaling over \$1 billion dollars in value.
- 7 years of sell side equity research experience, covering enterprise & infrastructure software, business services, media, communications, and banks.
- 6 years of portfolio managing experience.
- Manage the business development efforts in LATAM for NOBLE.
- Engineering, IT & Statistics, Escuela Superior Politecnica (Guayaquil, Ecuador); M.S. Economics, Florida Atlantic University.

Juan Arvelo, Director, Investment Banking

jarvelo@noblecapitalmarkets - 561.994.5731

- More than 18 years of corporate finance and capital markets experience, with a special focus on M&A, restructuring and capital raising transactions.
- Previous Director at Enkeros Investments and Activa Capital Markets
- Main focus in the QSR, financial institutions and energy sectors
- Managed corporate finance and recoveries division at PricewaterhouseCoopers (PwC)

Joseph Hain - Director, Investment Banking

Jhain@noblecapitalmarkets.com - 561.999.2265

- Prior experience holding senior positions at Robotti & Company, Wynston Hill Capital, SternAegis Ventures, WestPark Capital, and Tejas Securities
- Experience working with institutional, retail and HNW clients
- B.S. SUNY Albany with concentration in Biology, Chemistry, and Physics
- Holds various Finra licenses

John Connery, Analyst

jconnery@noblecapitalmarkets.com - 561.998.5478

- Joined Noble Capital Markets as an Investment Banking Analyst in 2016
- Worked previously as a private equity analyst for the family office of Marc Bell
- B.S. Investment Management, Lynn University

$$R + (e^2 + p^2) = \text{NF}$$

EQUITY CAPITAL MARKETS

**Renny Chavanikamannil, Managing Director,
Equity Capital Markets**

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SALES & TRADING

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Head of Institutional Equity Sales**

srashkin@noblefcm.com - 561.994.5738

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Head of Institutional Equity Trading**

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Noble has taken a proprietary approach to delivering a group of companies from each industry for the creation of the Noble Indexes. Noble's indexes composition may vary from time to time due to company specific fundamentals, developments, performance as well as overall industry/market conditions. Past performance is not indicative of future results. This is not an equity research report nor is it an offer for the purchase and/or sale of securities. This is a representative document that will help readers understand current valuation, market trends, and transaction history only.

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